The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLI. CHICAGO, ILLINOIS, MARCH 14, 1903. No. 11.

Original Articles.

BACTERIOLOGIC EXAMINATION OF THE BLOOD DURING LIFE IN SCARLET FEVER WITH SPECIAL REFERENCE TO STREPTOCOCCEMIA.

FROM THE MEMORIAL INSTITUTE FOR INFECTIOUS DISEASES.

LUDVIG HEKTOEN, M.D.

CHICAGO.

In this article are presented the results of a bacteriologic examination of the blood during life of cases of scarlet fever with especial reference to general streptococcus infection in this disease.

FREQUENCY OF STREPTOCOCCI IN FATAL SCARLATINA.

Streptococci have played a prominent part in the bacteriology of scarlet fever since the earliest application of bacteriologic methods to its study. Their importance has grown as the observations have multiplied, and many now regard streptococci as an essential factor in the scarlatinal process. Among the earlier observations concerning general streptococcus infections in scarlet fever are those of Crooke, Löffler, Friedländer, Fränkel and Freudenberg, Heubner and Bardt, Lenhartz and others, who found virulent streptococci in the internal organs and sometimes in the joints of victims of this disease. All these investigators appear to have regarded the streptococcus infection as entirely secondary in its character, the principal point of entrance being the throat.[1]

Babes[2] found streptococci in the internal organs of seventeen fatal cases of scarlatina. In fourteen instances of scarlatinal nephritis streptococci were present in the kidney in pure culture. In various articles Babes has suggested that streptococci are the cause of scarlatina. His material certainly justifies the conclusion that streptococci of varying virulence cause the larger part of the secondary infections in scarlet fever.

Streptococci have been found, in a large proportion of the cases examined, in the urine of scarlet fever patients by Courtois,[3] Lewis and others, and more frequently in albuminous than in non-albuminous urines.

Marie Raskin[4] made very extensive studies in the bacteriology of scarlet fever and its complications. She failed to find streptococci in the blood of 64 cases, but isolated it four times from the skin in 20 cases. But in 31 cases with serious complications of various kinds she found streptococci present in the pus, generally in the internal organs, occasionally in the blood. In two cases of scarlatina fulminans without complications streptococci were found in the blood. The streptococcus she found formed long twisted chains in bouillon which remained clear except for some sediment, and she regarded it as a form of *Streptococcus pyogenes* and as the most important cause of the complications of scarlet fever. In another article[5] she speaks of a micrococcus of irregular form and size, growing like streptococcus in gelatin and agar, and found in the blood and organs during the first four days of the disease. In the blood the organism was found within the leucocytes in diplococcus form, one coccus being larger than the other. Unfortunately the available abstract is too fragmentary to justify any conclusions as to the real nature and significance of the coccus.

R. M. Pearce[6] records the results of the examinations of 23 fatal cases of scarlet fever. "Of the 11 cases in which there was a general infection, the streptococcus was found in 9. In 6 of these it occurred alone, and in 3 associated with the *Staphylococcus pyogenes aureus*. Infection with the *Staphylococcus pyogenes aureus* alone occurred in one case, and with the pneumococcus alone in one case." *Streptococcus pyogenes* was found also to be the most frequent cause of the secondary inflammatory lesions in this series. Pearce regards the streptococcus infections, local as well as general, in scarlet fever as secondary in their nature, and he considers the streptococcus found in his series as identical with *Streptococcus pyogenes*.

Wright,[7] in 11 fatal cases, notes a general streptococcus infection in 4. Baginsky and Sommerfeld[8] found streptococci in the heart's blood and internal organs in every one of 82 fatal cases of scarlet fever, including several in which death occurred early and in which gross secondary lesions had not developed. They were unable to differentiate the streptococci isolated from ordinary pathogenic streptococci. A high degree of virulence for rabbits could be created readily by repeated passages through this animal. The serum of convalescents from scarlet fever had no demonstrable agglutinating effect on streptococci from the victims of the disease; nor did the serum of convalescents have any definite protective action in rabbits injected with such streptococci. In other words, the organism did not appear to possess any specific properties of any kind, demonstrable by these methods. Nevertheless, Baginsky and Sommerfeld contend that this streptococcus plays a specific rôle in scarlet fever and that all the phenomena of the disease are explainable by the distribution of the cocci in the tissues and by intoxication with their products. While scarlet fever never transfers erysipelas or sepsis, but only scarlatina, yet streptococci are constant in scarlatinal angina; they cause a general infection in all fatal cases of scarlatina, even the uncomplicated, and they have been found in the blood of scarlatinal patients during life. This seems to be the line of reasoning that leads to the conclusion that scarlet fever is a streptococcus disease.

Slawyk's[9] observations are interesting. Of 98 fatal cases of scarlet fever 52 (52.6 per cent.) yielded bacteria on examination of the blood after death. Streptococci were found 39 times, streptococci and staphylococci 6 times, staphylococci 3 times and pneumococci 4 times. He examined the blood during life in 72 cases with positive results in 7, streptococci being found 4 times and staphylococci 3 times. These 7 children died and in all the same bacteria were found after death. In these cases the blood was taken from the lobe of the ear and the small amount of blood thus obtainable may have reduced somewhat the number of positive cases. Slawyk regards the streptococcus invasion as secondary because of its absence in a goodly number of cases even after death; because in 82 per cent. of the cases in which it was found there existed grave ulcerative complications through which invasion readily could take place; and because streptococci were absent in those cases that died in the first three days of the disease. Present on the tonsils of healthy children he believes the oropharyngeal cavity to be the common point of entrance for streptococci in scarlet fever, the virus of which either increases their virulence or decreases the resistance of the tonsillar tissue. In measles and diphtheria he found streptococci in the blood in 22 and 20 per cent. of the fatal cases respectively.

Based on the negative result of a careful bacteriologic examination of the internal organs of a child that died 48 hours after the onset of scarlatina, Böhm[10] categorically denies all etiologic relationship between scarlet fever and streptococci.

Gordon[11] isolated a streptococcus from 10 fatal cases. The claim that this streptococcus is distinct and that it merits the designation *"Streptococcus scarlatina"* as yet seems to rest on rather slender basis. And Moser[12] isolated streptococci from the heart's blood in 63 of 90 cases of scarlet fever.

The foregoing summary shows the great frequency of streptococcus infection in fatal cases of scarlatina. It certainly lies near at hand to conclude that scarlet fever without streptococcus invasion would lose half its terrors even if one is not willing to accept the view that scarlatina is a streptococcus disease, caused by a specific streptococcus, a contention that is without definite proof though some facts may be adduced in its favor. Under these circumstances it would seem desirable to learn more about the presence or absence of streptococci in the blood of non-fatal, mild as well as severe, complicated as well as uncomplicated, cases of scarlatina. Comparatively little work has been done on this phase of the problem, and that is mostly of a rather fragmentary character.

BACTERIOLOGIC STUDIES OF SCARLATINAL BLOOD DURING LIFE.

Lemoine[13] found the streptococcus in the blood during life in 2 of 39 cases. Klein[14] was one of the first to describe cocci as the cause of scarlet fever. For years he has upheld as this cause *Streptococcus scarlatinæ* or *Streptococcus conglomeratus,* which, so he claims, was described by himself and Kurth.* Klein claims, further, that this organism does not occur in healthy persons or such as have angina not scarlatinal. He isolated it from the blood of 4 cases of 11 scarlet fever between the third and sixth day.

D'Espine and Marignac isolated from the blood of the finger of a scarlet fever patient a streptococcus. The case being typical and without complications in the usual sense, d'Espine[15] claims that the streptococcus was the cause of the scarlet fever.

Mery[16] isolated from the blood of a scarlet fever patient a streptococcus that proved refractory to Marmorek's antistreptococcus serum.

Seitz[17] examined the blood bacteriologically in the early stages of 12 cases of scarlatina, using about 1 c.c. of blood on various media. Streptococci developed in the cultures from one case that subsequently proved fatal. He also found streptococci in the internal organs of two fatal cases.

Reference has been made to the fact that Slawyk made cultures of the blood in 72 cases, the blood being obtained by puncture of the lobe of the ear; of the 7 positive results 4 concerned streptococci and 3 staphylococci. All of the 7 cases died and the same organisms were recovered from the internal organs after death.

Hlava[18] has described recently a streptococcus that he finds with special frequency in the acute eruptive diseases. In many respects this streptococcus resembles the ordinary pathogenic streptococci, especially *Streptococcus conglomeratus,* but Hlava claims for it the individual peculiarity of forming crumbling masses in certain media containing saccharose (Zopf's bouillon, saccharose-agar), the masses consisting of short chains of atypical and pleomorphic cocci embedded in homogeneous membrane. The organism is said by Hlava to be of feeble virulence, and that only when grown in fluid human serum. Much further work is necessary before this streptococcus, which Hlava designates as *Leuconostoc hominis* because of its resemblance to *Leuconostoc mesenteroides,* can be accepted as a definite and distinct form. Because of its frequency in scarlatina Hlava is led to say: *"Der Leuconostoc spielt enschieden eine wichtige Rolle in der Pathogenese der Scarlatina."* He demonstrated its presence in the blood during life in 6 cases of scarlet fever.

MATERIAL AND TECHNIC.

The cases of scarlet fever that furnished the material for the investigation, the results of which are now presented, occurred partly in the hospital of the Memorial Institute for Infectious Diseases, partly in the Cook County Hospital. I am indebted for courtesy and aid in various ways to Drs. Frank Billings, James B. Herrick and W. L. Baum, and to members of the resident staffs of the Cook County and Presbyterian hospitals.

The blood for the cultures is secured by puncture of some vein at the elbow after careful disinfection of the skin. This is the best method to secure blood for bacteriologic work. Glass syringes with platinum-iridium needles are used. In the case of very young children it may be difficult to puncture accessible veins, and in a relatively small number of instances the effort to secure blood may have to be abandoned. In no case has any evil resulted from the punctures, all of which have healed without the faintest indication of local reaction. The pain of the puncture is insignificant; momentary

* It will be recalled that Kurth (Centralbl. f. Bakt., 1892, xi, 503-509) has made one of the most successful efforts at differentiation of the streptococci by accurate study of their different forms of growth in bouillon and of the sediment that forms therein. From the tonsils in scarlet fever he isolated a form that produces granular or scaly coherent masses composed of very long, interwoven chains with only a few free cocci. This is his *Streptococcus conglomeratus,* which may occur also in the internal organs of fatal cases of scarlet fever. In Kurth's experience it was never absent from the surface of the tonsils. It may be associated in scarlet fever with other streptococci. *Streptococcus conglomeratus* nearly always kills white mice when inoculated at the root of the tail. It may remain viable for as long as six weeks or so when dried, and, while the question of its etiologic rôle had to be left open, Kurth points out that the transmissibility of scarlatina corresponds well with viability of *Streptococcus conglomeratus.*

washing the skin with 5 per cent. solution of carbolic acid seems to deaden acute sensation somewhat; the drawing of the blood so rapidly as to cause collapse of the vein seems to give considerable pain.

In the early part of the work white staphylococci appeared in the cultures much more frequently than later. White staphylococci have appeared in altogether about 18 flasks and 7 of these occurred among the cultures from the first 10 cases. This certainly speaks in favor of accidental contamination, and it is likely that in spite of painstaking precautions occasional contamination will take place either from the air or by the needle picking up cocci from the skin. As it has been impossible to differentiate the white staphylococci developing from time to time in the flasks from the vulgar staphylococci of the skin and air, it has seemed best, at least for the present, to pay no attention to these organisms. Of course, streptococci may occur occasionally on the skin in scarlet fever. This, however, probably is so infrequently the case that accidental contamination of blood cultures from this source may be left out of consideration. This is probably also a fair view to take of the rôle of the air as a source of accidental contamination with streptococci. In bacteriologic examinations of the skin in some 30 cases of scarlet fever by Mr. Dreyer, he did not encounter streptococcus, and Dr. Weaver met it only once in 18 cases.

In most of the cultures in this series quite large quantities of blood have been used, 0.5 to 1 c.c. in each flask of 150 or 100 c.c. of medium. Usually two flasks or more have been inoculated in each case. The principal reason for using large quantities of blood was to increase as much as possible the chances for positive results in case but few bacteria might be present. The media used were glycerin bouillon, plain bouillon, ascites bouillon (peptone bouillon 2 parts and ascites fluid one part), glucose bouillon and milk. From time to time the adaptability of the media used for streptococci has been controlled carefully. After 48 hours or so in the incubator (mostly under aërobic conditions) subcultures on solid media and stained smear preparations have been made in most of the cases even though there was no definite evidence of growth in the original cultures. When growth was evident plates were made to secure pure cultures.

RESULTS.

The principal details of the cases giving positive results are given in the accompanying table. In many of the cases smears of the blood were examined for bacteria, but in every case so far with negative outcome. In smears from the cultures in which streptococci developed diplococci and short chains were seen often within cells, but this need not necessarily indicate that the cocci occupied an intracellular position in the circulating blood. In no case was hemolysis of human corpuscles *in vivo* recognized, but this was not looked for systematically in all cases, and certainly not with sufficient care (centrifugalization of the whole blood so as to secure clear serum) in the cases that proved to give streptococci in the cultures of the blood. We hope to give closer attention to this point in the future.

In all cases giving streptococci, *Staphylococcus aureus*, or typhoid bacilli pure cultures developed in practically every instance.

Typhoid Bacillemia.—In two cases (only one of which is included in the table) the routine bacteriologic examination of the blood discovered the presence in it of typhoid bacilli at a period so early in the development of the disease that suspicion had not yet been directed to typhoid fever. In one of the cases the typhoidal attack began as the scarlet fever subsided; in the other case the typhoid fever developed in a woman admitted to the scarlet fever ward because of a slight general eruption, which did not prove to be scarlatinal. A third case of this sort has just been observed. In these cases we have a good example of the diagnostic usefulness of bacteriologic examinations of the blood. In both typhoid bacilli were demonstrated some time before the appearance of agglutinins in the blood.

Streptococcemia.—It is not the intention now to discuss the question of the unity or multiplicity of pathogenic streptococci. All the strains isolated in this series, except the one from Case 60, correspond to *Streptococcus longus*, most of them showing pronounced conglomerate growth. Some of the more important facts are given in the following abstracts of the records:

The streptococci isolated on the third and eighth days of the disease in Case 11, appears to be identical. Both give a moderately heavy, crumbling sediment in bouillon, and coagulate and acidify milk promptly. One c.c. of a 24-hour bouillon culture injected intravenously in a rabbit weighing 1,720 grams caused death in 4 days. This virulence was soon lost. On the fifteenth day of the disease the serum of the patient had no marked restraining influence on this streptococcus, nor did the serum of another case of scarlet fever. The streptococcus does not grow in filtrates of its own cultures. Such filtrates remain sterile also when inoculated with streptococci from some of the other cases.

Judging from the temperature curve, pulse record and general course, it can not be said that the streptococcemia in this case produced very marked clinical symptoms. There were no complications.

The streptococcus in the cultures made on the fifth day of the disease from the blood of Case 15 forms a sand-like sediment in bouillon, the particles being composed of conglomerate masses of cocci. It acidifies and coagulates milk. It does not grow in its own filtrates or in the filtrates of cultures of other streptococci in this series. The filtrate of bouillon cultures causes hemolysis of dog's corpuscles. One c.c. of bouillon cultures three

Table Showing Positive Results of Bacteriologic Examination of Blood in Scarlet Fever During Life.

Number.	Age.	Sex.	Day of Disease.	Medium and Number of Flasks.		Results.	Character of Attack and Remarks.
11	26	M.	3	Glycerin-broth,	4	Streptoc. in 1 F.	Moderat'ly severe.
			5	"	"	Sterile.	See text.
			8	"	"	2 Streptoc. in 1 F.	
			12	"	"	2 Sterile.	
14	22	M.	5	"	"	1 Streptoc.	Mild.
			7	"	"	Sterile.	
15	38	M.	2	"	"	3 Sterile.	Severe. See text.
			3	"	"	2 Sterile	
			5	"	"	2 Streptoc. in 2 F.	
			10	"	"	2 Sterile.	
17	10	M.	2	"	"	2 Streptoc. in 2 F.	Severe. See text.
			6	"	"	2 Streptoc. in 1 F.	
21	12	F.	3	"	"	2 Sterile.	Moderat'ly severe.
			6	"	"	2 Streptoc. in 1 F.	
27	22	F.	4	"	"	2 Streptoc. in 2 F.	Mild.
			7	"	"	2 Sterile.	
33	7	M.	5	Asc.-broth. 1		Strept. c.	Mild. See text.
41	16	M.	2	Glycerin-broth,	2	Sterile.	Moderat'ly severe.
			3	"	"	2 Streptoc. in 2 F.	
57	24	F.	7	"	"	2 Streptoc. in 2 F.	Moderat'ly severe.
60	23	F.	2	"	"	2 Streptoc. in 2 F.	Mild. See text.
			4	"	"	2 Streptoc. in 2 F.	
68	21	M.	9	"	"	4 Sterile.	Death. See text.
			10	"	"	2 Staphy. aureus.	
72	10	M.	4	"	"	2 Sterile.	Very severe. See
			28	"	"	1 Streptoc.	text.
80	12	F.	1	Glucose-broth,	2		
				Collodion sac.		Streptoc. in sac.	Moderat'ly severe.
81	7	M.	7	Glycerin-broth,	2	Staphy. aureus.	Death. See text.
			10	"	"	3 Cocci; no growth in subc.	
101	22	F.	6	"	"	2 B. Typh. in both.	Scarlet mild.

days old kills rabbits in five days after intravenous injection and causes hemolysis *in vivo*. The organism grew well in the serum of the case from which it was isolated and also in that of another case of scarlet fever. Clinically this case showed no glandular enlargement, but there were definite indications of inflammation in the wrist, shoulder and ankle joints which subsided rapidly.

The streptococci isolated from the culture of the blood of Case 17, on the second and sixth day of the disease are identical and form granular masses in bouillon. There is no growth in filtrates of streptococcus cultures. Two c.c. injected intravenously in a rabbit weighing 1,720 grams caused death in seven days. There were in this case severe throat symptoms and also swelling and tenderness of the wrist joints.

In Case 33 the cultures from the blood in ascites bouillon contained atypical streptococcal forms, but subcultures were not obtained. In the cultures made in ascites bouillon from the urine of the same patient there developed a feeble growth of streptococci with an unusual number of swollen, atypical and bacillary forms similar to those described by Ohlmacher,[19] and also noted by Hilbert[20] in his work on streptococci in the normal tonsils, as well as by others.[21]

In Case 60 the cultures on both the second and fourth day yielded pure growths of a streptococcus that was provided with a mucoid capsule. This coccus grew like ordinary streptococci on most media, but on Löffler's serum it produced rust-colored spots. This pigmentation disappeared after the second generation. Its pathogenic powers were not tested. The clinical course in this case was very mild, the temperature falling to normal on the fifth day. No complications.

In Case 72 the cultures made on the fourth day of the disease remained sterile. Three flasks were inoculated. On the twenty-eighth day a pure growth of streptococci was obtained. This coccus has the following characteristics: Abundant flocculent growth in the fluid part of Löffler's serum and in the lower parts of peptone bouillon ascites fluid tubes; milk acidified but not coagulated; in glucose bouillon crumbling masses formed at the bottom. The principal facts in the history of this case are as follows: From the time of entrance the patient was for many days more or less delirious; later on he lapsed into stupor and unconsciousness, the clinical picture being distinctly that of sepsis. In the early stages there was an intense pharyngitis and tonsillitis with large swellings of the cervical glands. Otitis developed and for a time there was tenderness over the mastoid processes. During the entire illness there was a marked leucocytosis which gradually passed away. There was no evidence of joint infections or of secondary internal foci.

In Case 80 the cutlures made in glucose bouillon remained sterile. At the same time as the cultures were made 1 c.c. of blood was mixed with 9 c.c. of ascitic fluid, first heated to 55 C. for 45 minutes, and placed in a collodion sac. At the end of 24 hours the fluid within and without this sac appeared sterile and the sac was inserted into the abdomen of a rabbit, where it remained for one month without apparent detriment to the animal. When removed the contents of the sac were milky and smears showed minute coccoid bodies not staining readily by methylene blue. The fluid in the sac was alkaline in reaction. Cultures were made on a large number of media, and on most of the tubes there developed a streptococcus, like *Streptococcus conglomeratus*, but only of small virulence that was increased by repeated passage through rabbits. This coccus grew readily in conglomerate masses in filtrates of its own cultures in milk and glucose bouillon, the reaction being acid to litmus. In the early cultures in milk especially many atypical and irregular forms were observed in the smears. Clinically the case was free from complications.

The streptococcus cultures from Cases 57, 21 and 14 correspond to those of *Streptococcus conglomeratus*. Those from Cases 14 and 41 caused the death of rabbits on intravenous injection of 0.5 c.c. or more: there was hemolysis of the red corpuscles in the rabbit injected with the coccus from Case 41. In Case 52 distinct streptococcal chains developed in the original cultures on the fourth day of the disease, but subcultures did not develop.

The evanescent character of the streptococcemia in some of the cases of this series makes it not unlikely that in many cases it may have escaped detection, especially in the younger patients in whom it was deemed best to make but one venous puncture. Perhaps this may serve also to account in some degree at least for the relatively greater number of positive results in the older patients.

Table Showing the Ages of the Cases.

Age.	1-5	6-10	11-15	16-20	21-25	26-30	31-40	Total
Total number...	9	32	11	10	21	12	5	100
Streptococci in. .		3	2	1	4	1	1	12

It might be said, too, that perhaps streptococci were not detected oftener because the blood cultures were not made early enough in the attack. It could be answered that in three positive cases the first cultures gave negative results, while later cultures gave positive; further, that of 10 cases examined on the first day only one gave growths.

Table Showing the Days of the Attack When Cultures Were Made.

Day.	1	2	3	4	5	6	7	8	9	10	Later or Unknown	Total
Total number...	10	14	24	17	14	5	4	4	1	1	6	100
Streptococci in first culture.	1	2	1	1	2	..	1	..	..	..	..	8
Streptococci in second culture	..	..	1	..	..	1	..	..	..	..	1	3
Streptococci in third culture.	..	..	..	..	1	..	..	..	..	..	..	1

Undoubtedly the number of positive results would increase the more frequently from the earliest period the cultures in the single cases could be made. On account of the well-known sensitiveness of streptococci special care must be had always with respect to the media used. In work of this kind positive results are more valuable in the forming of definite conclusions than negative.

Table Showing General Character of the Cases in This Series.

	Mild.	Mod.	Severe.	Severe.	Fatal.	Total.
Total number.....	45		40	11	4	100
Streptococci in.....	4		5	3	..	12

This summary shows that the relatively largest number of streptococcal growths were obtained from the more severe cases. Two of the fatal cases are accounted for further on; in the other two there was no postmortem examination and in each case of these there was but one set of blood cultures made.

Genesis of Streptococcemia.—In many of the cases giving streptococci in the cultures it seems to concern a streptococcus bacteriemia (septicemia) without localizations in different parts of the body. This form of bacteriemia without metastases is referred to by Monod and Mascaigne,[22] and more recently again by Kretz,[23] as common in the eruptive diseases and as only poorly understood, being more marked in some epidemics than in others. No doubt continued routine bacteriologic examinations of the blood in these and other diseases will prove the best source for light on the relations of this

bacteriemia without metastases to the severity of the clinical symptoms as well as on other points not now clearly understood.

The investigations of Hilbert[24] and others show that pathogenic streptococci—*Streptococcus longus*—are constant inhabitants of the normal throat, especially the surface of the tonsils. On this account some, like Hilbert, would deny streptococci all importance in the etiology of anginas, but it is difficult to go so far in view of the great increase in the number of streptococci in anginas of various kinds, especially the scarlatinal, a fact definitely established in the cases of this series by Dr. Weaver in this institute. At all events the conditions of the throat in scarlet fever would seem to offer excellent opportunities for general streptococcus invasion either directly by entrance into the blood or indirectly by way of the lymphatics and lymph nodes. The exact mechanism of the general infection is not easily unraveled. It lies too near at hand to assume that it may depend on the loss of bacteriolytic complements of serum. Indeed, this assumption has been made by some who would explain in this way the frequency of streptococcus infection in chronic diseases of various kinds because the serum in such diseases may show a loss of bacteriolytic complements for colon bacilli and typhoid bacilli; but normal human serum has no appreciable bactericidal action on streptococci, so far as this can be demonstrated by the usual methods for such purposes, and streptococcemia is, of course, not to be explained by the loss of certain properties the blood does not possess normally. Experiments made in conjunction with Dr. Weaver show, furthermore, that the serum of cases of scarlet fever of moderate severity does not lose any bactericidal effect on typhoid bacilli, a fact that still further disproves the inference that the loss of bacteriolytic serum complements is responsible for streptococcus infections. It is not the intention to discuss now the relations to streptococcus infection of the leucocytes and of phagocytosis on which Denys, Bordet and Marmorek lay so great a stress. Suffice it to say that in general human tissues appear to be favorable soil for the growth of streptococci; indeed, of all animals Marmorek regards man as the most susceptible for streptococci. There is reason to believe, too, that streptococci grow in virulence when introduced into the human body. In connection with this it is interesting to note, as first shown by Marmorek, that streptococcal virulence—a most changeable quantity—is best preserved in a medium of human serum one part and peptone bouillon two parts. Given then a normally feeble general resistance to streptococci and specially favorable conditions for their multiplication in the throat and on the tonsils in scarlet fever, it need not be an unusual event for streptococci to enter the blood either in small quantities as only transitory sojourners there or increasing in number and virulence to cause the most severe general infections. That this is the case is indicated by the results in this series in which streptococci are shown to have appeared in the blood to such an extent as readily to be demonstrable by inoculating one or two cubic centimeters into bouillon or similar medium, and that in comparatively mild cases in which the normal or uncomplicated course of the disease was not modified to any extent (Cases 14, 27, 33, 60). In other cases, again, the streptococcus invasion was associated with more severe symptoms and a more protracted course (11, 15, 17, 72). Case 72 may be taken as an example of a severe type of streptococcus infection in scarlet fever, terminating in recovery.

The fact that spontaneous recovery may take place in streptococcus bacteriemia, even when severe and long continued, naturally tends to make one somewhat skeptical in regard to the actual benefit of antistreptococcus serum in similar cases. Since the introduction of bacteriologic blood examinations during life, observations have been made that show, as did Petruschky in one of the earliest studies of this kind, that recoveries in various forms of bacteriemia are not so very rare. Bertelsmann[25] reports 47 cases of surgical bacteriemia examined bacteriologically during life; in 28 of these it concerned streptococci, and 13 of these were all that proved fatal. In 2 cases the bacteriemia appeared transitory, but recovery took place in cases whose blood yielded as many as 435 colonies on mixing 15 c.c. with agar and pouring into plates.

Influenza Bacillemia.—While streptococci no doubt are the most common agents of general infection in scarlet fever and other diseases of the same group, the investigation of Jehle seems to show that under certain conditions other bacteria also may find open doors, so to speak, to general invasion in these diseases. Jehle[26] found the bacillus of influenza so frequently in the blood of fatal cases of scarlet fever (22 times in 48 cases), measles (15 times in 23 cases) and varicella (5 times in 9 cases) as compared with non-eruptive diseases, that he believes the exanthemas in some way favor the general infection with this bacillus when it is present on the tonsils or in the bronchial exudate. This form of secondary infection may cause a high mortality. In scarlet fever influenza bacillemia may occur even before the rash breaks out. In this work not a single case of this form of secondary invasion has been encountered, although it has been kept in mind almost from the first; the mixing directly of considerable quantities of blood with glycerin, glucose and ascites bouillon would seem to offer proper conditions for the growth of the bacillus of influenza. It must be borne in mind, however, that during the past year influenza has not been especially prevalent in Chicago. Not a single case of the disease has been recognized among the cases of scarlet fever composing this series nor in the wards occupied by them.

Staphylococcemia.—In the two fatal cases of this series *Staphylococcus aureus*, and not streptococci, developed in the cultures made during life. In both cases it concerned pure cultures.

CASE 68.—Man, 21, admitted to the hospital of the Memorial Institute for Infectious Diseases on the 9th day of a severe attack of scarlet fever. There was beginning desquamation; swelling and erosions of lips and nostrils; purulent conjunctivitis, pharyngitis and otitis; swelling and tenderness on both sides of the neck; heart and lungs normal; spleen palpable. Violent and nearly continuous delirium set in. The cultures from the pharynx showed streptococci and staphylococci, those from the ears streptococci. Lobular pneumonia developed and death took place on the 16th day of the attack. There was no leucocytosis but rather leucopenia—9,500, 3,300 and 5,200 on the 10th, 12th and 15th days respectively.

The cultures of the blood made on the 9th day of the disease, the day he entered the hospital, all remained sterile. Three days later new cultures developed rapidly a liberal growth in pure form of *Staphylococcus aureus*. In both the flasks there were seen the day after inoculation numerous irregular masses, much like the plugs of exudate in lobar pneumonia, scattered over the bottom and clinging to the sides, each mass being surrounded by a circle of hemolysis. This coccus produced a funnel-shaped liquefaction of gelatin, coagulated and acidified milk, and formed golden-yellow pigment, especially on potato and blood serum. Blood from this case preserved in glass tubes with bouillon in proportion of 2 to 8 also underwent hemolysis.

Anatomic Diagnosis (Dr. Robinson):—Desquamation of scarlet fever; pustules on arms, neck and legs; bronchopneumonia; pulmonary infarction; ulcerative pharyngitis; suppurative otitis; acute splenic swelling.

Cultures made from the heart's blood at the time of the autopsy showed *Staphylococcus aureus* only; those from the lungs showed *B. mucosus capsulatus* and *Staphylococcus aureus* as did also the cultures from the bone marrow. The liver contained *B. mucosus capsulatus*. The kidney, brain and spleen were sterile.

CASE 81.—Boy, age 7, admitted on the 7th day of the attack, much emaciated, throat ulcerated, cervical glands enlarged. Beginning desquamation. Pulse weak and intermittent. Bloody discharge from nose and mouth. Semi-unconscious. Death on the 11th day. Leucocytes on the 10th day, 32,000.

The cultures from the blood made on the 7th day of the disease gave pure growths of *Staphylococcus aureus*. The cultures made two days later showed cocci in the smears, but all subcultures remained sterile.

Anatomic diagnosis.—Scarlatinal desquamation; pharyngeal necrosis and ulceration; acute cervical lymphadenitis; splenic swelling; acute renal degeneration; enlargement of intestinal lymph nodes and of mesenteric glands; esophageal ulceration; multiple purulent arthritis; pleural adhesions. The cultures made at the autopsy gave the following: Plate cultures from blood, bile and pus in the left knee-joint remained sterile. The spleen gave streptococcus and colon bacillus; the liver streptococcus; the kidney colon bacillus. This streptococcus grows in conglomerate masses in bouillon.

In this interesting case it looks as if the staphylococci in the blood on the seventh day died out completely. There was, however, a coincident or subsequent, more likely the latter, streptococcus infection, as shown by the presence of this organism in the liver and spleen at the autopsy. The case indicates more the complexity of these secondary conditions than would be apparent from knowledge of postmortem findings only. Recovery from staphylococcemia is perhaps more frequent than thought; instances of it are described recently by Hug[27] and by Reymond and Alexandre.

RELATIONS OF STREPTOCOCCI TO SCARLET FEVER.

We come now to a brief discussion of the very important question of the exact relation of streptococci to scarlet fever. I have pointed out that some investigators impressed especially with the frequency, not to say constancy, of streptococcus infection of a general character in fatal forms of the disease, look on the streptococcus as playing a specific part in the scarlatinal process. The results of this study of the bacteriology of the blood of scarlatina in life, if they are to be given any value in deciding this question, would seem rather to favor the view that the streptococcus infection is secondary because absent in the large majority of the cases, even severe ones, and because though absent in the early part it may appear in the later stages of some cases. It seems to me that the theory that scarlatina is a streptococcus disease does not receive any direct support from these observations. In this connection it may be well to refer to the fact that streptococci seem to occupy about the same relations to diphtheria and to smallpox as they do to scarlet fever, if we judge from the frequency of streptococcus infections in these diseases. Dahmer[28] obtained streptococci from the heart's blood and spleen in 47 per cent. of 36 cases of fatal diphtheria, from the lungs in 85 per cent. and from the trachea in 100 per cent. As stated, Slawyk found streptococci in the blood in 22 and 20 per cent. of fatal cases of measles and diphtheria respectively. The literature on streptococcus infection in diphtheria is further reviewed by Councilman, Mallory and Pearce in their comprehensive study of this disease.[29] In Flexner's[30] statistics of terminal infections in chronic heart and kidney disease, the most prominent organism, in the local as well as the general infections, appears to be the streptococcus either singly or associated with the organisms.

James Ewing[31] found a streptococcus in the heart's blood of all of 29 cases of smallpox, the abundance being directly proportional to the severity of the disease. In five examinations during life all the cultures of the blood were sterile, but Arnaud[32] is quoted by Ewing as having found streptococci in the blood of two hemorrhagic cases during life. Ewing also found streptococci generally in the variolous skin lesions. This streptococcus, which does not seem to have any cultural or morphologic peculiarities, was pathogenic for mice and rabbits, but in no case did it produce any variolous lesions, while material from pustules caused smallpox in two monkeys. In hemorrhagic smallpox Ewing believes the condition to be one of symbiosis of the specific agent and the streptococcus. It would be interesting to know the results of the bacteriologic examination during life of a large series of cases of smallpox, which we see is a disease just as prominently associated with streptococci as is scarlet fever, but in which it is possible to show definitely that the real cause is distinct and peculiar.

In the face of these considerations it seems to me that the best hypothesis of the etiology of scarlet fever for working purposes is the one that in this disease two infections generally coexist in the oro-pharyngeal cavity. The cause of the specific, primary infection is unknown. So far its existence has not been rendered evident except by the specific contagious and clinico-epidemiologic peculiarities of scarlatina. The well-marked and durable active immunity, an immunity entirely different from anything we know of spontaneous or experimental streptococcus diseases may also be cited as strong evidence of a specific primary infection in scarlatina. The second infection is the streptococcus infection, which may be regarded as practically constant because there seems to be in all cases of scarlet fever a marked increase in the number of streptococci in the throat as compared with normal conditions, but this infection does not seem, as a rule, to be generalized when we except the severe, fatal cases. Whether the virus of scarlet fever directly increases the virulence of existing streptococci, stimulating them to the production of toxins peculiar to scarlet fever, and whether it favors general streptococcus infection by decreasing local or general resistance to streptococci, whatever the factors concerned may be, are questions on which further light is greatly needed.

Welch's Theory of Bacteriogenic Cytotoxins.—The view has also been advanced that scarlet fever is in one way a local disease and caused by *Streptococcus longus*, which, localizing in the pharynx, produces an erythemogenic toxin (Berge[33]). Much discussion has been carried on as to the specificity of the scarlatinal streptococci, but without final settlement of the question. It has been suggested that the cocci may be ordinary, well-known streptococci that under special conditions from a limited pharyngeal focus produce a specific toxin which, carried in the circulation, calls forth the cutaneous eruption. This view recalls the interesting theory recently advanced by Welch[34] in order to explain some of the effects of pathogenic organisms on the cells of the host not readily explainable by what can be learned from the study of bacterial cultures and the toxic substances there produced. This is the theory of the production of bacteriogenic cytotoxins under the influence of stimuli from the host according to the general principles of Ehrlich's

great theory of the production of toxins and lysins in general. In response to the action of atom complexes from the cells and fluids of the host the bacteria produce substances with special affinities that act as intermediary bodies in linking to cells of the host toxic complements derived either from the fluids of the host or from outside sources. It is, of course, conceivable that streptococci under special conditions might cause the symptoms and signs of scarlet fever, according to the principles of Welch's hypothesis of bacteriogenic toxins of somatogenic origin. This view of the nature of scarlet fever as yet lacks experimental proof. It receives neither support nor discredit from the results of this study.

CONCLUSIONS.

The conclusions that suggest themselves from this work so far as scarlatinal streptococcemia is concerned are that streptococci occasionally may be found in the blood of cases of scarlet fever that run a short, mild, and uncomplicated clinical course; that streptococci occur with relatively greater frequency in the more severe and protracted cases of scarlet fever in which there also may develop local complications and clinical signs of general infection, such as joint inflammations, but even in the grave cases of this kind spontaneous recovery may take place; and finally, that streptococcemia may not be demonstrable in fatal cases of scarlet fever. The theory that scarlet fever is a streptococcus disease does not seem to receive any direct support from this work.

REFERENCES.

1. The earlier observations on secondary mixed infections in the eruptive diseases are summarized well by Bayard Holmes, North American Practitioner, 1889, i, 75-83, 121-131, 268-275.
2. Bakteriologische Untersuchungen über septische Processe des Kindesalters, Leipzig, 1889.
3. Streptocoque et scarlatine, These, 1899.
4. Centralbl. f. Bakt., 1889, v, 433-444 and 465-479; also Abstract of article in Wratch (1888), Ibid., 286.
5. Abstr. from Russian, Ibid., 683.
6. Medical and Surgical Reports of the Boston City Hospital, 1899, x, 39-82; see also, ibid., 1898, ix, 86-105.
7. Boston Medical and Surgical Journal, 1894.
8. Berl. Kl. Wochenschr., 1900, xxxvii, 588-592 and 618-621.
Arch. f. Kinderheilk., 1902, xxxiii, 1-55. Berl. Kl. Wochenschr., 1902, xxxix, 1113-1116 and 1152-1154.
9. Jahrb. f. Kinderheilkunde, 1901, liii, 505-515.
10. Arb. aus Baumgarten's Institut, 1891-1892, i, 392-403.
11. Twenty-ninth Report Local Government Board, 1901, London. Abstr. in Baumgarten's Jahresbericht, 1902, xvi, 105.
12. Wien. Kl. Wochenschr., 1902, xv, 1053-1055.
13. Bull. et Mem. Soc. med. d'Hop. de Paris, 1896, xiii.
14. Centralbl. f. Bakt., 1899, xxv, 776-777.
15. Compt. rend. de l'Acad. de Paris, 1895, 1007.
16. Compt. rend. de Soc. de Biol., 1896, x.
17. Münch. med. Wochenschr., 1898. Abstr. in Centralbl. f. Bakt., 1898, xxiii, 1061.
18. Centralbl. f. Bakt., 1902, xxxii, 263-270.
19. Journ. Med. Research, 1902, vii, 128-136.
20. Zeitschr. f. Hyg. u. Infektionskr., 1899, xxxi.
21. Babes and Stolz: Quoted by Hilbert, see 24.
22. Rev. de Chir., 1894, xiv. Abstr. in Centralbl. f. Bakt., 1894, xiv, 1019.
23. Verh. deut. path. Gesellsch., 1901, iv, 186-187. Zeitschr. f. Heilkunde, 1902, xxii.
24. Zeitschr. f. Hyg. u. Infektionskr., 1899, xxxi, 381-415.
25. Verh. d. Gesellschaft f. Chir., 1902, xxxi, 291-304.
26. Zeitschr. f. Heilkunde, 1901, xxii, 190-220.
27. Centralbl. f. Bakt., 1902, xxxi, Ref., 783 and 784.
28. Arb. aus Baumgarten's Institut, 1896, ii, 262.
29. Journ. Boston Soc. Med. Scien., 1900, v, 139-319.
30. Journ. Experiment. Med., 1896, i, 558-576.
31. Trans. Assoc. Am. Phys., 1902, xvii, 208-216.
32. Rev. de Med., 1900, 303.
33. Compt. rend. de la Soc. de Biol., 1893, 1012.
34. British Med. Jour., Oct. 11, 1902, 1105-1114.

The metric system is objected to by some London physicians on account of the liability of mistaking the abbreviation of "gram" for that of "grain." This difficulty is easily overcome by following the practice in the United States of designating "gram" by the abbreviation capital "Gr.," or "Gm.," and continuing to designate "grain" with small "gr." What is more, a prescription written in the metric system is very likely to have other terms than that of "gram," and no pharmacist would expect to receive a prescription with some terms in the metric system and others in the old, cumbersome system.—*Meyer Bros. Druggist.*

THE GLYCOSURIC SYMPTOM OF DISEASE AND ITS MEDICINAL TREATMENT.*

HEINRICH STERN, PH.D., M.D.
NEW YORK CITY.

An unusual amount of grape sugar in the urine is by no means an absolute indication of the presence of diabetes mellitus; it may be concomitant with, or sequential to, various other transitory, as well as chronic, anomalies. Thus glycosuria in its alimentary form *e saccharo* may be induced in the presence of various traumatic and non-traumatic neuroses; of alcoholism; of Graves' disease; of gastrointestinal disorders, as hyperacidity; of hepatic affections, etc.

Glycosuria, mostly of the spontaneous transitory type, may appear after injury and extirpation of less important organs; after ether and chloroform anesthesia; after administration of drugs and chemicals like phloridzin, mercuric bichlorid, chloral, morphin, strychnin, amyl nitrite, curare, thyroid preparations, adrenalin, etc.; after inhalation of carbon monoxid; after the excessive use of tobacco; during the luetic process, and during or after infectious diseases.

Generally speaking, non-diabetic glycosurias are the result of intoxications, that is, of slight or graver disturbances due either to influences coming from without or to such arising from within. Some transitory glycosurias may attain a certain degree of chronicity by the persistence of their underlying cause. These factors, however, are mostly of a non-permanent nature. While thus non-diabetic glycosuria may occasionally continue for protracted periods, diabetic glycosuria, or what is considered such, the concomitant phenomenon of exceedingly chronic processes is chronic in the majority of instances.

The vast difference between non-diabetic and diabetic glycosuria is the endurance of the causative factors in the latter. True diabetes exists before excretion of sugar supervenes,[1] and apart from some very rare exception, it still continues when, for the time being, glycosuria has ceased.

While we are able to assign or to trace the majority of non-diabetic glycosurias to a direct or more remote factor, we have as yet not succeeded in determining the substratum of diabetes proper. While, therefore, non-diabetic glycosurias may be amenable to rational treatment by influencing or removing their causal conditions, the therapy of true diabetes, on account of our meager knowledge concerning its pathology, must of necessity be of a more or less empiric nature.

Hence it occurs that the diet plays such an important rôle in the treatment of diabetes mellitus. Total or partial withdrawal of carbohydrates from the nutriment results in decrease or complete cessation of glycosuria and in obliteration of the other characteristic phenomena in almost every instance. Again, the exclusion of starchy and saccharous material from the food remains not without influence on non-diabetic glycosuria. Under an antidiabetic regimen non-diabetic mellituria is frequently diminished, but although the latter hardly ever attains that degree of intensity which is common in diabetic glycosuria, yet it does not yield to carbohydrate-free nutriment in the same measure as diabetic glycosuria.

Those cases of long-continued glycosuria which are not modified by a diet devoid of farinaceous material, as

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Materia Medica, Pharmacy and Therapeutics, and approved for publication by the Executive Committee: Drs. A. W. Baer, A. B. Lyons and W. J. Robinson.

a general rule, are non-diabetic. This is especially the case (excepting, of course, when the patient is in the last stage of diabetes) when progressive bodily decline ensues after persistent adherence to a rigid antidiabetic dietary.

Furthermore, there are some instances in which diabetic glycosuria occurs contemporaneously with chronic non-diabetic mellituria in one and the same individual. Here the diabetic glycosuria and the other diabetic phenomena may subside on dieting; the glycosuria of non-diabetic origin, however, is likely to continue.

The good results attained by instituting a rigid diet in diabetes and its concomitant glycosuria lead to the supposition that analogue improvement would accrue from it in other glycosurias. In fact, little discrimination is exercised between the various types of glycosuria; one is, as a rule, treated like the other, that is, by an antidiabetic regimen.

Apart from exerting little or no influence on the respective foundation of the various non-diabetic melliturias, it is evident that the indiscriminate adaption of this excellent empiric method in combating the diabetic state to the treatment of all glycosurias irrespective of their underlying cause, is irrational and undoubtedly injurious in many instances.

If we bring to our mind that glycosuria is but a consequence, but an enunciation of manifold causes, we will understand that it is useless to treat the symptom *per se* and that we must try to influence the causal conditions directly.

Moreover, is it necessary to combat glycosuria whenever it occurs? My experience prompts me to say "No." If the patient feels well and if there is no evidence of physical or mental decline, I think we should not attempt to interfere with an eventual slight glycosuria. The end may not justify the means, especially if routine treatment implying deprivation is to be employed.

On account of the general application of the dietary methods to the management of the various glycosuric states and on account of injudicious prescribing and the polypharmacy of former years, medicinal treatment has of late been relegated to the rear. In the degree however, in which the influence of diet on amelioration of all the forms of mellituria has been overestimated, the potency of a number of medicinal agents on the various substrata of the glycosuric symptom is nowadays unquestionably underrated.

When both dietary and medicinal treatment are instituted contemporaneously, the real value of either of them can not be determined, because an eventual amelioration of the glycosuric symptom may be due to the diet alone, to the medicament alone, or to their combined influence.

INDICATIONS FOR THE INSTITUTION OF DIETARY TREATMENT ALONE.

All patients exhibiting the usual syndrome of diabetes mellitus, whose urine is free from acetone, diacetic and beta-oxybutyric acids, should be subjected to strict dietary regulations until all the symptoms have completely subsided, or until all symptoms excepting glycosuria, which in the meantime has declined to less than 1 per cent., have disappeared.

INDICATIONS FOR THE INSTITUTION OF MEDICINAL TREATMENT ALONE.

1. All cases systemically declining on the regulation of diet.

2. All cases in which a long-continued rigid diet can not effect complete cessation of the glycosuric symptom.

3. All cases excreting less than 1 per cent. of glucose in which the patient suffers from some disorder but does not exhibit the usual symptom-complex of diabetes mellitus.

4. Such cases in which diet has brought about subsidence of diabetic phenomena, but in which continued mental excitement is liable to effect recurrence of glycosuria.

INDICATIONS FOR BOTH DIETARY AND MEDICINAL TREATMENT.

1. All cases in which a dietary as well as a specific hygienic treatment is indicated and in which the patient through circumstances is prevented from properly executing them.

2. All cases exhibiting the syndrome of diabetes mellitus, but which for reasons of an accompanying affection, like chronic nephritis, for instance, can not be kept under a rigid antidiabetic regimen.

The following lines are devoted to the consideration of such drugs and chemicals which I have employed for the purpose of obliterating certain disorders and anomalies and the glycosurias accompanying them. Being entirely based on personal experience, it is obvious that account can be furnished of but a limited number of medicinal agents and their respective modes of employment.

Medicines do not seem to exert any influence in arresting the progressive tendency of diabetic deterioration, that morbid state characterized by apparent disintegration of body albumin into carbamid and dextrose. The medicinal treatment of this affection, with its unknown, or at least very obscure pathology, of course, was not considered at all. The medicinal treatment of chronic glycosurias of supposedly known origin, however, is dwelt on in the following.

PSEUDO-REMEDIES.

In the treatment of the glycosuric symptom we have to distinguish between two kinds of drugs and chemicals, viz., those which act as genuine remedies and those which interfere with various tests for urinary glucose, thereby misleading us to assume a lesser degree or the absence of glycosuria. Among the pseudo-remedies there are a number of so-called intestinal antiseptics which interfere more or less with the various testing methods, especially with the fermentation test. Jolles[2] pointed out that the guaiacol compound, known as benzosol, introduced into the organism yields levorotatory substances which would on that account indicate an apparent decrease of dextrose if the urine were examined polariscopically.

Record of Mrs. C. L., aged 59 years.

Date.	24 hrs. Urine. cc.	Medicine.	Dose.	Glucose. Fermentation. p. c.	Fermentation. grms.	Fehling. p. c.	Fehling. grms.
Sept.	2100	. . . . .	. . . . .	3.22	67.62	3.33	69.93
30							
Oct. 25	2350	Salol . . .	0.3 gram 4 times a day for 3 days.	1.84	43.24	3.12	73.32
29	1960	Acid carb..	gtt. 2, 3 times a day for 4 days.	2.3	45.08	3.57	69.972
Oct. 6	2150	Ac. salicyl.	0.3 gram 3 times a day for 5 days.	2.07	44.505	3.8	81.7
13	2000	Ac. benzoic	1 gram 4 times a day for 6 days.	2.76	55.2	3.8	76.
20	1740	Calomel. .	0.5 gram on this day .	2.99	52.026	3.33	57.942
27	1850	Beta-naphtol salicylate.	0.35 gram 4 times a day for 1 week.	2.07	38.295	2.77	51.245

During the last year I have made a series of observations in glycosurias regarding the influence of certain

remedies on the urinary fermentative qualities. These observations are not as yet concluded, but to give an idea of the potent influence of some medicines in preventing complete fermentation, I cite from my notes the following instance:

Among the chemicals interfering with the reduction of the copper and bismuth solutions, thereby deceiving the observer as to the true state of affairs, is benzoylsulphonic imide the saccharin of commerce.

MEDICINAL AGENTS IN GLYCOSURIA DEPENDING ON PERVERTED FUNCTION OR REMOVAL OF GLANDS AND ORGANS.

(*a*) *Pancreas.*—As a general rule, pancreatic glycosuria is very little influenced by medicines. An alkaline treatment may avert its rapid progression, but it exerts no action on the existing phenomena. The ingestion of large amounts of alkaline waters, of course, diminishes the percentage of glucose by diluting the urine; the absolute amount of excreted glucose, however, remains thereby unaltered. Preparations of pancreas avail nothing beyond improving proteid-fat assimilation; they may thus prevent further systemic retrogression or may even effect augmentation of body weight. In a case of undoubted pancreatic diabetes with which was associated far-advanced chronic diffuse nephritis and achylia gastrica, I finally succeeded in reducing the glucose output which originally amounted to over 100 grams per diem, to 10 or 15 grams a day with the aid of this combination:

R.	Pancreatin .....gr. xxx	2
	Trypsin	
	Foliæ myrtilli pulv., āā.....gr. xv	1
M.	Ft. pulv. d. tal. dos. L. (50).	
Sig.:	One powder three times a day.	

As the patient was under an exclusive milk regimen there is no doubt that it was the medication which effected the glucose reduction. The subsidence of the nephritis as well as of the diabetic phenomena went hand in hand with the decline of the glycosuria. The case was under my observation about two years ago, and appeared then rather hopeless. Lately I heard that the patient is well enough to attend to his business.

The trypsin was added to the pancreatin after this *per se* had been prescribed and had been found wanting. It was my intention to add each of the three pancreatic ferments to the pancreatin—separately, of course. This was done to increase the action of the pancreatin and to find out whether any of the pancreatic ferments occurred in diminished amounts in the organism to the deficiency of which the glycosuria could have been due.

The same combination worked satisfactorily, at least for some time, in some other instances of apparent pancreatogenous glycosuria. In two or three similar instances, however, it displayed no activity whatsoever.

(*b*) *Liver.*—Common or hepatogenous glycosuria, that form which is due to interference with the glycogenic function of the liver to the extent that the ingested carbohydrates are not utilized normally,[3] is best managed by dietary means. In exceptional cases only, as in the presence of acetonemia and acidosis, or where on account of an associated affection a strict antidiabetic regimen can not be continued for any length of time, is medication called for. It is here that the various alkalies and the prolonged administration of arsenical preparations do most good.

Chionanthus virginica has given me good results in some glycosurias which were dependent on functional liver disease.

In acid intoxication the following combination has given me very gratifying results:

R.	Sodii bicarbonici	
	Calcii carbonici prec., āā.....ʒiss	45
	Sodii pyrophosphorici .....ʒiiss	10
M.		

From 10 to 50 grams of this combination should be taken every day in plain or carbonated water for a protracted period.

When coma seems imminent, and during the comatose state, from 2 to 6 grams of precipitated calcium carbonate, suspended in water by the addition of 25 per cent. its weight of acacia, and administered every 2, 3 or 4 hours of enteroclysis, has proved very useful in my hands.[4]

Mineral waters deserve some recognition in the therapeutics of hepatogenous glycosuria. The action of the salt solutions, however, contrary to former belief, is not a direct one. By increasing cellular metabolism they stimulate hepatic activity, and hence there may be a greater tolerance for carbohydrates.

As a general rule, the glycosuria yields in the same ratio as the underlying affection disperses.

(*c*) *Gastrointestinal Tract.*—Chronic affections of the stomach and intestines stand occasionally at the foundation of enduring glycosuria. I had a case under observation in which long-continued hyperchlorhydria proved to be the cause of the obstinate glycosuria, as by suppression of the former the latter became also obliterated.

If an individual has glycosuria and at the same time a chronic gastric or intestinal disorder, the latter should be treated first, especially when other diabetic phenomena are missing and when the excreted dextrose amounts to less than 1 per cent. Of course, such dietary treatment has to be pursued, as the particular gastric or intestinal affection demands. I think milk is best adapted for most cases, at least at the outset. If, in addition to the proper diet the same medication were employed as would be if glycosuria were not present, there is little doubt that with the amelioration of the underlying affection the glycosuria would also cease.

Antacids, antifermentatives, stomachics, etc., and stomach or rectal tubes should be utilized in much the same manner as if the glycosuric condition did not exist.

(*d*) *Kidneys.*—Phloridzin glycosuria, the association of chronic diffuse nephritis with glycosuria when the former is antedating the latter, and the frequent excretion of glucose in renal hemorrhages seems to point to an eventual renal origin of glycosuria.

I have seen four cases in which glycosuria followed pre-existing Bright's disease. Dietary regulations adapted to the condition of the kidneys—milk predominating—and medication directed toward amelioration of the nephritic state, brought about decided general improvement in two cases. In the one case, urinary glucose, after three weeks' treatment, was reduced from 0.47 to 0.14 per cent., and in the other, glucose was not excreted any more in appreciable amounts in the second week following the institution of treatment.

(*e*) *Other Organs.*—As long as the functions of a diseased or extirpated organ are assumed by another organ, in other words, as long as the metabolic equilibrium remains undisturbed, glycosuria will not occur. It is therefore often necessary to treat, that is, to stimulate, the organs which are expected to exert vicarious functions.

In a case under my observation glycosuria occurred after ulceration and subsequent removal of both sub-

lingual glands. A diet somewhat reduced in starchy material, an occasional mild ptyalagogue and the administration of ptyalin, or pancreatin, kept the glycosuria in check for over two years. Later true diabetes supervened, for the treatment of which a rigid antidiabetic diet had to be resorted to.

Hyperthyroidism is occasionally associated with glycosuria. In the two cases of the association which came under my observation thyroid therapy, arsenic, etc., were of no avail.[5]

MEDICINAL AGENTS IN GLYCOSURIA DEPENDING ON URIC-ACIDEMIA AND POLYSARCIA.

Glycosuria arises not infrequently from a gouty basis. This is readily understood when we remember that both may be the result of similar intracellular processes. The medicinal treatment should be chosen to influence the substratum common to both affections. In such instances diabetic phenomena, excepting glycosuria, if present at all, are only slightly pronounced. The glycosuria hardly ever exceeds 1 per cent.; the urine is normal, or almost normal, in amount; its density is high.

As a rigid antidiabetic diet is here contraindicated on account of the mild form of the secondary affection and of the untoward influence it may exert on the gouty state, medicaments should be the factors mostly to be dependent on in the therapy of the two concurring conditions.

Antilithiatic measures causing amelioration of the gouty affection subdue also the accompanying glycosuria in the majority of instances. In those cases in which glycosuria persists after cessation of the gouty phenomena, glycosuria is very likely the original abnormal condition and is depending on some other cause.

Medicines like the salicylates, salol, piperazin, tincture and salts of iodin, aspirin, various alkalies, alkalin-muriatic waters, and, in a sense, also opium, formerly lauded as efficacious in the treatment of glycosuria and diabetes, probably possess remedial qualities only when the glycosuric condition is the consequence of a gouty process.

When obesity preceded glycosuria, a diet effecting reduction of body weight is imperative. Diet as well as exercise should be carefully regulated according to the type of obesity.[6] Thyroid therapy, on account of its well-known tendency to produce or to intensify glycosuria, should be resorted to only under extreme circumstances. Fucus vesiculosis, especially the citric acid extract as devised by me, I have found of great value in the reduction of polysarcia and its accompanying glycosuria.

MEDICINAL AGENTS IN GLYCOSURIA DEPENDING ON LUETIC CONDITIONS.

Syphilitic infection seems to be much oftener the direct cause of glycosuria than is generally assumed. We have syphilitic affections of the liver, of the gastrointestinal tract, of the pancreas and especially of the brain. Glycosuria may be attendant on an eventual syphilitic process in any of these organs. I have seen two cases during the last year, both young men who were rejected by two of the large life insurance companies on account of "diabetes." In Case 1 the excreted glucose never amounted to more than 0.25 per cent., or about 3.5 grams per diem; in Case 2 from 5 to 6 grams of glucose were egested daily. Both patients admitted to have been infected with syphilis. Antiluetic treatment resulted in the cessation of glycosuria in Case 2; Case 1 is still under observation as the glycosuria persists. Case 2 was granted a life insurance policy some time ago.

Potassium iodid and the mercurials are the indicated remedies. Mercury should be applied by inunctions or by subcutaneous injections. I have seen speedy results following the hypodermatic injection of mercuric bichlorid. This, by the way, is the only rational manner in which to administer corrosive sublimate. Introduced into the stomach it is frequently followed by untoward secondary effects, and it does not display that degree of activity which it exhibits when injected hypodermatically. I use solutions of the strength of 1, 2 and 3 per cent., to each of which 2 per cent. sodium chlorid is added. I generally start with 8 drops of the 1 per cent. solution, adding two drops at each subsequent injection. When 15 or 20 drops have been used—the capacity of the ordinary hypodermic syringe—I continue with 8 or 9 drops of the 2 per cent. solution, adding but one drop at each subsequent injection. If, after prolonged administration of 15 or 20 drops of the 2 per cent. solution, the syphilitic process is not under control, the 3 per cent. solution should be utilized. In the first two weeks injections are daily made; later on they are administered at first every second day and then twice a week. I inject the solutions through a platinum iridium needle, which is introduced at least to the depth of three centimeters in order to prevent abscess formation. The injections are best made into the buttocks.

MEDICINAL AGENTS IN NEUROGENOUS GLYCOSURIA.

Chronic glycosuria is very frequently the enunciation of an affection of the nervous system. It has been found to occur in tumors of the brain, particularly when located in the medulla oblongata, cerebellum or pons varolii; in dementia paralytica; in multiple sclerosis; in cerebrospinal meningitis; in cerebral hemorrhage; in encephalomalacia; in tabes; in affections of the sympathetic nervous system; in traumatic conditions of the brain; in traumatic and functional neuroses, etc.

Generally speaking, the neurogenous type of glycosuria is the one in which medicinal treatment seems *a priori* indicated. The majority of medicaments propounded for the "cure of diabetes" exert their action on and through the nervous system. Opium (morphin, codein, heroin, dionin), the bromids, chloral hydrate, chloralamid, antipyrin, acetanilid, phenacetin, belladonna, strychnin, *Syzygium jambulanum*, ergot, uranium nitrate—these all influence the nervous system to a greater or less extent.

In certain instances of neurogenous glycosuria, especially in such cases where the output of glucose does not exceed 1 per cent., that is, about 15 grams per day, and where the patient is rather emaciated, well-directed medicinal treatment alone will often afford relief of the nervous affection as well as of its glycosuric phenomenon. In other cases, however, in which we have to deal with a well-nourished and even obese subject egesting more than 1 per cent. of grape sugar, a proper dietary treatment, at least at the outset, should go hand in hand with the administration of medicines.

As many of the nervous conditions underlying glycosuria are of an exceedingly chronic nature, the poisonous and narcotic remedies should be resorted to on exceptional occasions only. I do not think that I prescribed opium or its alkaloids or derivatives (for the condition *per se*) more than in 5 per cent. of the several hundred cases of chronic glycosuria which have come under my observation. I only give opium when excessive cellular catabolism is to be arrested, that is, in cases rapidly declining. Opium retards the intracellular processes, and on this account it may act efficaciously in the

specific instances, at least for the time being, however, in consequence thereof it is a double-edged sword which may also cut the other way.

If the effect of opium is desired, its alkaloids or derivatives should not be given. In the control of the glycosuric symptom opium seems to exhibit qualities not possessed by either of them. However, morphin is more reliable than codein, and this acts prompter than heroin or dionin.

The bromids, cerebral and spinal depressants as they are, may subdue some of the nervous symptoms, but I found them rather indifferent concerning suppression of the glycosuric phenomenon. Chloral hydrate, by reason of its antispasmodic and depressant properties, affords relief in certain conditions of the nervous system underlying glycosuria without influencing the latter.

Antipyrin is not without merit in reducing glycosuria consequential to functional neurosis, particularly if the latter is a sequela of an acute infectious disease. Glycosuria on the basis of a traumatic neurosis sometimes yields to belladonna or atropin. I have seen satisfactory results from the administration of small doses of ergot in glycosuria following injury of the nervous system. In no case of glycosuria in which uranium nitrate alone was employed did I notice any material change in the output of glucose.

Syzygium jambulanum is undoubtedly that agent which is of greater value in the suppression of neurogenous glycosuria than any other medicinal substance as yet advocated for that purpose. Preparations of this drug obtainable are powdered jambul seeds and fluid extract of jambul seed. The dose of either should be in the beginning 0.75 gram three times a day; this is to be increased to 10, 20 and even 30 grams a day.

I had a solid extract prepared from the jambul seeds which in appearance and consistency resembles the extract of aloes. I prescribe it in the form of pills or capsules. I have given as much as 10 grams a day of this solid extract.

There seem to be different qualities of jambul seed in the market. I judge so from the degree of activity displayed by various specimens. When, therefore, the administration of jambul has proved a failure in lowering the glucose output, it is best to obtain the drug from some other source and to try it again.

Jambul in small doses may be given for protracted periods. It is best to continue its administration indefinitely in all those conditions where the nervous affection proves to be unyielding and where the accompanying glycosuria is generally of a low degree, but tending to occasional exacerbations. The following mass may be put up in pills or gelatin capsules. In cases where the combination was indicated it has nearly always kept the glycosuria at a minimum point:

B.	Ext. seminis jambulæ	3ixss	37 5
	Ext. valerianæ	gr. cxiiss	7 5
	Ext. fuci vesiculosis	gr. lxxv	5
	Ext. cypsipedii		
	Ext. scutellariæ, ää	gr. xxxviiss	2 5
	Ext. piscidiæ erythrin	gr. xx	1 25
	Ext. gelsemii		
	Ext. belladonnæ, ää	gr. viiss	0 5
	Ext. physostigmæ	gr. iv	0 25
	Aloin	gr. xv	1

M. Ft. Massa et divide in pil. (caps.) No. CC. (200). Sig.: From three to twelve pills (capsules) a day.

REFERENCES.

1. Heinrich Stern: On the Prodromic Stage, the Early Recognition and Early Treatment of Diabetes Mellitus. N. Y. Med. Jour., July 10, 1897.
2. A. Jolles: Prager med. Wochenschrift, 1893, No. 12.
3. Heinrich Stern: Points Connected with the General Etiology and Pathogenesis of Diabetes Mellitus. Phila. Med. Jour., April 27, 1901.
4. Heinrich Stern: Coma Diabeticum: Its Treatment. THE JOURNAL A. M. A., Dec. 8, 1900.
5. Heinrich Stern: On the Association of Graves' Disease with Glycosuria and Diabetes Mellitus. THE JOURNAL A. M. A., 1902.
6. Heinrich Stern: On the Treatment of Obesity. THE JOURNAL A. M. A., Feb. 11, 1902.

DISCUSSION.

DR. W. W. TOMPKINS, Charlestown, W. Va.—In the region in which I live the population is about one-third negroes. They are largely syphilitic and tuberculous, but it is remarkable that I have never seen a case of diabetes or glycosuria in the colored race. Other practitioners in my neighborhod, on being asked, could not recall having seen a case. I can not offer any reason for the immunity, if it exists; they live in about the same way and eat the same food that the whites do. They eat sugar and are very fond of sweets, but do not seem to have glycosuria as the whites do. Has the author made any observations on this point? I do not just comprehend the difference that Dr. Stern made between glycosuria and diabetes and wish for a clearer definition.

DR. H. C. WOOD, JR., Philadelphia—I have given methylene blue to three cases of diabetes mellitus, with apparently good results in two. One case improved very distinctly; this case happened to be in a negro. On one point I desire some light: Does the form in which the carbohydrates are administered in these patients make any difference? In the German medical journals lately much has been said about the value of potatoes in the dietary of diabetics. I can not understand the rationale of giving potatoes and excluding bread; or why potatoes should be good and bread bad for a patient with diabetes.

DR. HENRY R. SLACK, La Grange, Ga.—In regard to the use of potatoes as a substitute for other forms of starchy food in diabetes, I have closely watched several cases while under this treatment in the Johns Hopkins Hospital at Baltimore. A number of experiments were made with regard to the effects of different articles of diet on the excretion of sugar. In one case, a divinity student, after taking 500 gm. of bread, 390 gm. of grape sugar were excreted; while after taking 800 gm. of potatoes he only had 90 gm. of sugar in his urine. In another case, that of a young woman, while the results were not so marked as in the former, yet the decline in the glucose was notable. On 400 gm. bread she excreted nearly 300 gm. sugar, while on 600 gm. potato it was less than 100 daily. One day I was much surprised, while the patient was on the potato diet, to find that the amount of sugar suddenly went way up, to over 200 gm.; but I discovered afterward that visitors had been with the patient the day before, and that they had given her about a quarter of a pound of candy to eat, which fully explained it. However, in a few days, with care in the diet, the amount of sugar again diminished. It showed that while the girl had only eaten about 60 gm. of candy still the candy had so stimulated the glycosuria that not only the candy was added to the sugar but more of the starch of the potato had also been converted. I offer no explanations for this phenomenon, but merely state it as a clinical observation that less sugar is excreted when the patient is kept on potatoes than when on any other form of starchy food.

DR. W. J. ROBINSON, New York City—There are many diseases about which we really know very little; but about diabetes and rheumatism we know less than of any other. We know absolutely nothing about the etiology of either disease. With regard to the use of potatoes in the diet: A few years ago if a physician had dared to propose the use of potatoes it would have been taken as an indication of gross ignorance; but now this is advocated by some of the best practitioners. It has been suggested in explanation that the potato contains a large amount of potassium salts, and that the condition giving rise to the diabetes is favorably affected by these salts in the potato, when used as food. It is also claimed that the carbohydrates of the potato act more favorably than other starches. If this is so it will explain the reduction in the grape-sugar of the urine when potatoes are used. Whether true or not, if the result of eating potatoes is a reduction of the glycosuria, we

can give them empirically, just as we use certain drugs in the treatment of diabetes, on a purely empirical basis.

DR. A. B. LYONS, Detroit—Not long ago my attention was directed to one of the many preparations recommended to physicians for the treatment of diabetes, which was said to be made from one of the myrtaceæ. The formula given called for "myrtle (crystals)." This puzzled me at first, but on examining the preparation I arrived at an interpretation. Myrtle crystals can mean nothing but jambul seeds, a well-known remedy in some forms of glycosuria.

DR. W. J. ROBINSON, New York City—A few years ago a remedy for diabetes was brought out and was much vaunted in Germany by the manufacturers as an infallible specific. It was called "musol." It was found afterward that it was absolutely nothing but salol.

DR. HEINRICH STERN, New York City—Some of the participants in the discussion must have misunderstood me as I did not utter a single word as to the medicinal treatment of diabetes mellitus. I merely considered the glycosuric symptom of disease and the medicinal treatment of conditions attended by this symptom, and more especially of certain types of disease in which glycosuria is apt to occur. I can not accept the statement that we know nothing about the cause of this symptom. It is the office of the physician to investigate the etiologic factors of each individual case presenting itself for treatment. Routine treatment in glycosuric conditions is certainly unscientific and often injurious. To treat every case of glycosuria like diabetes is a very easy thing, but it is not the proper procedure. In a large proportion of cases of non-diabetic glycosuria, perhaps in over 90 per cent. the causes of the glycosuric symptom can be ascertained and with the knowledge of the cause to guide us, it may be successfully treated. While we know very little as to the causative factors of diabetes itself, we know a good deal about the various types of glycosuria and the conditions underlying the appearance of the glycosuric phenomenon. In reply to the question as to the frequency of diabetes in negroes, some years ago I studied and arranged the records relating to vital statistics in the city of New York, and found that in a period of eleven years prior to 1900 there had been reported fifteen cases of diabetes that had ended fatally in negroes. One of the cases of Graves' disease, accompanied by glycosuria, which I reported before the Section on Practice of Medicine, occurred in a negress. So that, while it is unusual to find grave conditions attended by glycosuria in the negro, such cases are occasionally observed.

Among the remedies considered in my communication I only included such as I have personally found to be efficacious in the treatment of the glycosuric symptom. I purposely omitted all those so-called remedies which, after continued and repeated trials, I have found valueless in ameliorating the output of urinary glucose. In answer to Dr. Wood's question, I have no definite results to report from the use of methylene-blue. I have used the chemical not very frequently and only reluctantly. Still, in those cases in which I have employed it, it was continued for protracted periods and the cases were kept under close observation. Ergot has rendered me good service in a number of instances. Its action is especially marked in cases characterized by pronounced polyuria. It influences the circulation of the brain and hence is indicated when the cause of the glycosuria is within the brain and when it seems necessary to produce an artificial anemia there. It is also of decided influence in cases depending on or concurring with cardiac hypertrophy.

Now as regards the form of carbohydrates to be allowed in the diet. I did not speak on the dietary treatment of either diabetes or glycosuria. This is a chapter of itself, and a very long chapter at that. I pointed out that dietetic treatment is not always indicated in the various non-diabetic glycosurias. The question of carbohydrates, therefore, could only be of importance in non-diabetic glycosurias, if the patient was also affected with a gastric disturbance demanding for a time the exclusion of starchy or saccharin material. The question was raised as to the tolerance of potatoes by the diabetic organism. A French clinician was the one who first introduced the potato diet. I have allowed the use of potatoes in a number of patients. Certain patients, it is true, tolerated the potatoes very well, but it must not be forgotten that at least the same proportion of diabetic persons tolerate other forms of starchy food if taken in moderation and that there exists a great number of diabetics who can partake of large quantities of milk with impunity. I do not consider the potassium salts contained in the potatoes to be of any advantage, for if they were, potassium as such or any of its salts should have proved of benefit in the treatment of the diabetic or glycosuric conditions. This is plainly not the case. In comparing potatoes with other forms of carbohydrate food, it should be remembered that, in the first place, potatoes contain very small amounts of solid material, therefore also of starch, in proportion to their bulk. This is one reason why their employment may be less objectionable than that of bread. They are bulky; in one hundred grams of potatoes but twenty-one grams of carbohydrate matter are contained, while in the same amount of wheaten or rye flour from 60 to 90 grams of carbohydrates are found. To obtain the same caloric value about four times as much of potatoes as of flour or bread must be consumed. The potato diet may satisfy a patient, but he has taken very little starch and a great deal of water. In the way of substitutes for bread I have advised the preparation of peanut flour and bread and cakes baked therefrom. As a general rule, however, I find that most patients get along with little or no bread.

I am no advocate of bread substitutes; the dietetic treatment is essential in diabetes. Combined with a medicinal treatment, dietary regulations may be very beneficial in the various forms of glycosuria, but a majority of instances of glycosuria do not ask for an antidiabetic regimen.

SOME RARE FORMS OF CHRONIC PERITONITIS

ASSOCIATED WITH PRODUCTIVE FIBROSIS AND HYALINE DEGENERATION.*

ALBERT G. NICHOLLS, M.A., M.D.
Lecturer in Pathology, McGill University, and Assistant Pathologist to the Royal Victoria Hospital.
MONTREAL.

In the discussion of the subject of peritonitis an element of confusion has been introduced owing to the loose way in which certain descriptive terms have been used. A confusion in the nomenclature leads inevitably to a confusion of ideas. We find that many writers of repute use terms such as "peritonitis," "perihepatitis" and "perisplenitis" to designate a condition in which fibrous bands of adhesion connect the various viscera or traverse serous cavities, even in the absence of any sign of accompanying active inflammation. While, of course, such adhesions are an evidence of an inflammatory process, they are the result of such a process rather than the process itself. Now a result can not be the cause; scar-tissue is not the wound, nor are fibrous adhesions inflammation. It is obviously then incorrect and misleading to use a term like peritonitis to designate such a condition. We should prefer to restrict the term to those cases in which inflammation is actually in progress at the time of observation, since fibrous adhesions may be merely evidence of an inflammatory process long since past and gone. There are cases, however, where adhesions occur with the addition of changes due to an associated active process, with certain forms of which I propose to deal.

In the course of the present communication I desire more especially to call attention to a peculiar form of chronic peritonitis of progressive development, several instances of which have come under my notice recently

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. A. Stengel, W. S. Hall and L. Hektoen.

that is of considerable interest and importance. While from the point of view of etiology several varieties must be recognized, anatomically speaking they have much in common; in many there is more or less exudation of a sero-fibrinous or fibrino-purulent character, while adhesions, plastic and fibrous, are common. The feature, however, that gives the affection its characteristic form is a peculiar overgrowth of fibrous tissue on the peritoneal membrane and the surfaces of the abdominal viscera leading to induration and deformity. This fibrous tissue undergoes hyaline transformation so that plaques or continuous sheets of pearly-white cartilaginous appearance are produced in various parts. The material in question has every feature of newly-formed tissue, and the disease is both chronic and progressive. Shrinkage of the fibrous tissue takes place, hence one might correctly speak of the disease as a chronic "indurative" peritonitis.

The process when diffuse is usually most marked about the upper part of the peritoneal cavity, the capsules of the liver and spleen, the mesentery and the great omentum, and may even extend to the pleural and pericardial cavities. Although not new, the subject is one that has attracted but little attention in proportion to its importance. Cases of this kind usually come under the notice of the clinician with ascites, slight abdominal pain, alteration in the size of the liver and slight anasarca, so that at first sight there is a considerable resemblance to cirrhosis of the liver. These cases are so remarkable and differ so much from the ordinary chronic peritonitis that their exact relationship is not at first sight apprehended.

A brief reference, in passing, to the forms of peritonitis may not be out of place at this point, since it will render plainer what is to come. All peritonitides may be divided into primary and secondary forms. A primary peritonitis is defined by Flexner[1] to be "a condition in which the inflammation, usually diffuse, of the serous cavity takes place without the mediation of any of its contained organs, and independently of any surgical operation on its parts." As Flexner correctly points out, these are usually due to terminal infection. From their nature it is obvious that they can not lead to the chronic disease and so may be dismissed at once from our consideration. Chronic peritonitis may be developed from an originally acute disease, either by a succession of relapses or a gradual amelioration in the severity of the attack, or it may develop insidiously from the first. A point of some importance in chronic peritonitis, even if it subsequently become generalized, is that, with the exception of those cases dependent on ascites or secondary infection, it is practically always local at the beginning and is in almost every case secondary to disease of one of the abdominal viscera. Careful examination in these cases will show that the vast majority of instances arise by the extension of disease from some organ in close anatomic relation to the peritoneal membrane. The ways in which this may occur are multitudinous, but the more important may be mentioned—gastric or intestinal ulcers, cholecystitis, pericholecystitis, traumatism, abscess or gumma of the liver, inflammations of the internal female genitalia, hernia, tuberculosis and carcinoma, echinococcus cysts.

THE VARIETIES OF PERITONITIS.

In many cases it is not uncommon to find local inflammation with adhesion of the adjacent surfaces, but a certain percentage of these will go on to a wide dissemination; we have, therefore, to recognize both local and diffuse forms. Why a local process of this nature should persistently spread is not very clear. The answer is perhaps to be found in the nature of the initial lesion which is usually of a type not amenable to ordinary medicinal measures, while it usually occurs in some part where there is continuous mechanical irritation incident to the functioning of the parts affected. Probably, too, the germs at work are of relatively low virulence and adhesions form which tend to inhibit the activity of the process, and thus convert what would otherwise be an acute process into a slowly progressive one. Dissemination of the infective agent takes place through the lymph system rather than by direct extension over the peritoneal surface. According to the nature of the exudation produced we can conveniently divide chronic peritonitis (diffuse) into three main forms:

1. *Chronic Exudative Peritonitis*, in which there is a considerable outpouring of serous, sero-fibrinous or fibrino-purulent fluid, with loose plastic adhesions; fibrous bands are few or absent.

2. *Chronic Exudative and Adhesive Peritonitis*, presenting less exudation, but with somewhat numerous and firm adhesions, often leading to sacculation of the contents.

3. *Chronic Hyperplastic Peritonitis*, in which there is sero-fibrinous or fibrino-purulent exudation, but more or less generalized adhesions are the rule, together with the formation of firm nodules or continuous sheets of hyaline fibrous tissue.

Many points of interest tempt us to discussion, but in the present paper we are principally concerned with the third form:

CHRONIC HYPERPLASTIC PERITONITIS.

In entering on a consideration of this affection it may be said at the outset that this form is much rarer than either of the other two. Many cases are merely of pathologic interest, since they are only discovered incidentally at autopsy, but some few, owing to the extent of the lesions and their localization to special organs, are susceptible of diagnosis during life, and hence are of clinical importance. Anatomically speaking, the cardinal features of the disease are the production of more or less exudation into the abdominal cavity and the production of fibrosis leading to the formation of sporadic elevated nodules on the peritoneal surface or to a continuous fibrous membrane of considerable thickness and cartilaginous texture on the various viscera.

Judging from a careful review of the literature, cases of this kind are not very common, but this, I think, is possibly due to the fact that attention has not been sufficiently drawn to the possibility of their occurrence. As an illustration of the early stage in the process I may refer briefly to the following case coming under my own notice at the Royal Victoria Hospital:

CASE 1.—Male, aged 80, gave a history of intestinal disturbance in the epigastrium, pain after eating, epigastric tenderness, occasional vomiting and progressive emaciation. When admitted to the wards free fluid was found in the abdominal cavity, with tenderness and resistance in the epigastrium, and to a less extent over the ileocecal region.

***Autopsy.*—The gall bladder contained calculi and was shrunken, with greatly thickened walls. On the under surface of the diaphragm were numerous pearly nodules of hyaline, translucent appearance, which microscopically were composed of laminated fibrous tissue with hyaline degeneration. The great omentum was converted into a fibrous cord, and the spleen was tied up in fibrous adhesions. Between the coils**

of the intestines were numerous plastic and some firmer adhesions, with pockets of fibrino-purulent fluid. A glassy avascular membrane of new formation covered over the whole front of the abdominal cavity, through which the intestines could be indistinctly made out.

Here, no doubt, the exciting cause of the peritonitis was cholelithiasis with cholecystitis and pericholecystitis. A very similar case has been recorded by Hübler, Sr.,[2] in a woman of 56, who suffered from repeated attacks of biliary colic and jaundice followed by ascites. Death ensued after ten years, and at autopsy cholecystitis was found, the peritoneum over the anterior abdominal wall was thickened and the liver covered by a thick membrane of porcelain-like appearance; a local purulent peritonitis was also present. Here the lesion was more diffuse than in my own case, but in both we have a chronic diffuse peritonitis of the peculiar type in question, clearly originating in a local inflammatory lesion.

Some of these cases appear to be due to trauma, as in an instance related by Henoch,[3] where a little girl was kicked in the region of the liver and some weeks later developed enormous ascites. At autopsy an extensive hemorrhagic and hyperplastic peritonitis was discovered, together with bruising and laceration of the liver. Von Wuncheim[4] records a similar case apparently of a different origin, in a man of 43, who had suffered for four years with palpitation of the heart and ascites. At autopsy there was ascites and the peritoneum was greatly thickened and of pearly-white appearance. A large aortic aneurism had ruptured into the right auricle, and in addition to the chronic peritonitis there was contraction of the aortic valves, chronic Bright's disease and passive congestion of the organs. Von Wunscheim's case suggests strongly that the determining factor in the production of the peritonitis was the vascular disturbance and transudation induced by the heart lesion.

Both Rokitansky[5] and Ziegler[6] state that local thickenings of the peritoneum may arise from the irritation of a simple ascites. But after a careful investigation into this point I have not been able to satisfy myself that a diffuse thickening of the membrane of the type referred to occurs from this cause. It is well known how frequently an acute peritonitis complicates those diseases associated with ascites, such as cirrhosis of the liver and Bright's disease, but as yet it has not been made clear in how far this event is due to secondary infection rather than to the simple mechanical irritation of fluid. I am inclined to think myself that in every case infection is at work. It is probable, however, that passive congestion of the organ may lead to a local thickening of the peritoneum covering it. Taking the spleen, for instance, in 467 postmortems of which I have notes, fibro-hyaline plaques were found on the capsule 17 times, and the most important single causative factor was passive congestion. This view is also held by Eichhorst.[7] In my experience, however, in cases of passive congestion the hyaline thickening remains strictly local. So far as I can see from a careful study of this form of peritonitis the most important factor is the extension of an inflammatory process from some one of the contained viscera. I have been led to this conclusion from a consideration of the etiology, the clinical course of the disease and a careful study of the exudation and the thickened membrane produced.

In another class of cases the peritoneum is affected together with other serous membranes. In a recent study of this form,[8] for which I have proposed the term "Multiple Progressive Hyaloserositis," I have been able to collect 14 instances, and several more are now recorded. (See A. O. J. Kelly.[17]) As a rule the pericardium, the pleuræ and the upper part of the peritoneal membrane are the parts affected, although variations occur. About half the cases seem to have started from some lesion of the abdominal viscera, frequently a perihepatitis secondary to some inflammatory affection of the liver. One case apparently started from a duodenal ulcer. Next to this the most important association is a chronic indurative mediastino-pericarditis extending secondarily to the peritoneal cavity. More rarely still chronic pleurisy is an exciting cause. In such cases extension of the inflammatory agents takes place by means of the lymphatics of the various cavities which have free communication. The most important form of this type is chronic perihepatitis, to which Curschmann[9] has drawn attention under the name of "Zuckergussleber," or "icing liver." Chronic perihepatitis is almost invariably associated with chronic peritonitis,, although the converse proposition by no means holds good. Clinically, the most striking symptoms are, general weakness, shortness of breath and a gradual increasing and refractory ascites; jaundice is uncommon in uncomplicated cases. The resemblance to atrophic cirrhosis of the liver is striking, but differential diagnosis is possible. In the form beginning with peritonitis and perihepatitis the leading features are ascites, which tends to return after repeated paracentesis; the liver is at first enlarged and later small, smooth and hard. Later, pleural effusion or adhesions may form, particularly on the right side, and later still a similar involvement of the pericardium leading to cardiac insufficiency.

The disease may begin acutely with fever, rigors, pain in the epigastrium and tenderness in the hepatic region. Other cases develop insidiously and do not come under observation until the ascites is well marked. The spleen is usually enlarged. A case of this type is the following, which I have have had an opportunity of studying fully:

CASE 2.—A woman, aged 48, had been ill for some two years with weakness, dyspnea, palpitation of the heart, and extreme anasarca.

Autopsy.—**The abdomen contained 6000 c.cm. of straw-colored fluid clotting readily; there were fibrous adhesions between the great omentum and the uterus and left ovary, and between the coils of the intestines. The great omentum was contracted into a firm fibrous mass, the mesentery thickened and greatly shortened.**

A striking feature was that in the upper part of the abdominal cavity, particularly the capsules of the liver and spleen, the serous membrane was greatly thickened and of pearly-white gelatinous appearance. Both pleural sacs were obliterated and the pleural membrane showed the same peculiar metamorphosis. The two layers of the pericardium were universally adherent by fibrous adhesions.

Microscopic Examination.—**This showed that the material referred to was an organizing inflammatory deposit, the main features of which were hyperplasia of fibrous tissue with consecutive hyaline degeneration.**

While, as has been mentioned, most of such cases hitherto reported have originated in the peritoneal cavity, in others the peritonitis arose by extension from the pericardium or pleuræ. In cases of hyperplastic peritonitis such as has just been described it is difficult, in the light of our present knowledge, to assign the exact cause. In most there is a history of acute infection of various kinds, such as acute hepatitis, cholecystitis and pericholecystitis, typhoid fever, perityphlitis and the like, and it is probable in these cases that we are dealing with an infection by micro-organisms of relatively low virulence, so that for a considerable length of time the

tissues of the body are able to resist the inroads of the disease, and thus the fatal termination is almost indefinitely prolonged.

Much interest attaches to the question: What part does tuberculosis play in this form of peritonitis? Louis[10] held that every case of chronic peritonitis was tubercular. But this is certainly incorrect. It is probably true that the majority of cases are tubercular, but numerous exceptions occur, as the above recorded cases sufficiently prove, for in none of them was the *Bacillus tuberculosis* discovered, although search was made for it. It is quite possible, however, for the tubercle bacillus to produce a hyaline and productive fibrosis of the peritoneal membrane, quite comparable to the simple form previously described. This fact has been but little recognized up to the present. Within recent years numerous observations have been made tending to show that tuberculosis of the serous membranes and of the various organs is not necessarily a destructive process, but is, on the contrary, occasionally a constructive one; caseation may be slight or absent while fibrous hyperplasia is in excess. Such hyperplastic tuberculosis, or "pseudoneoplastic growth," has been met with in the larynx, where it has been mistaken for carcinoma.

Analogous to this is that peculiar form of lymphadenitis, which clinically may be taken for Hodgkin's disease, until the discovery of the specific bacillus reveals the true nature of the case. Why the disease should take this form is difficult to say, unless it be, as Lartigau has suggested, that we are dealing with a bacillus of very low virulence. It is possible, too, that bacilli from other than human sources may be at work. The following case will illustrate the hyperplastic type of tubercular peritonitis:

CASE 3.—A male, aged 37; five months before coming under observation noticed that he was losing flesh and his appetite was failing. Two months before admission the abdomen was noted to be hard and somewhat distended; there was neither tenderness nor vomiting and the bowels were regular. Three days before admission he was seized with severe pain in the left hypochondriac region which gradually became generalized. On admission he was found to be greatly emaciated and cachectic with great abdominal distension and rigidity of the abdominal walls. A friction rub was detected over the left base anteriorly and there was slight cough; irregular areas of dulness were noted over the abdomen. The diagnosis was probably tubercular peritonitis with perforation and acute septic peritonitis.

***Autopsy.*—There was found sero-fibrinous pleurisy on the left side and scattered tubercles were present on the left pleura and diaphragm. A few older tubercles were found in the right lung and peribronchial glands. The main interest centered in the condition of the peritoneum. The abdominal cavity contained fecal material and gas due to perforation of the ileum; some chronic fibroid tuberculosis was found matting together the intestines. The liver capsule was greatly thickened, covered with shaggy adhesions and showed some hyaline degeneration; the liver was adherent to the diaphragm. The spleen was also adherent to the diaphragm and its capsule showed hyperplastic pearly thickening. Microscopically this consisted of a laminated deposit of connective tissue with marked hyaline metamorphosis. Small isolated tubercles on the surface of the intestines presented an identical structure. The capsule of the liver showed much less hyaline change, but contained numerous caseous foci; the great omentum was not detected; tubercle bacilli were demonstrated in the capsule of the liver.**

Here the thickening of the peritoneum was very similar to the hyaline change in the simple form of inflammation and at first sight might be mistaken for it, but the main difference is that, to some extent, areas of caseation were superadded. In the hyperplastic tubercular peritonitis the ascites is not likely to be so great as in the simple form, and may indeed be absent, while fibrous bands of adhesion are more numerous. So far as the distribution of the lesions is concerned the disease is strictly comparable to the non-tubercular form, for in both we may have small isolated nodules scattered over the peritoneum, or thick sheets of hyperplastic material. The two forms present an additional similarity in that the process is not necessarily confined to the peritoneum, but may extend to the pleuræ and pericardium. I have met with two cases of this type, and Strajesko[11] has recorded a case which is important, since it proves that the multiple involvement of the serous membranes of Curschmann's "icing-liver" type may be due to tuberculosis, a fact which was hitherto unknown. A similar case has been recorded in this country by Herrick.[13]

I would like here to emphasize the similarity in appearance between the simple and the tubercular forms of hyperplastic peritonitis. Many of these cases come to operation and confusion is liable to arise. It is not likely that the tubercular form will be mistaken for the non-tubercular, but I am convinced that the reverse not infrequently occurs; particularly when isolated fibrous nodules are seen upon the surface of the intestines or about the liver and diaphragm is the case likely to be regarded as tubercular. As in the tubercular form the mere fact of opening the abdomen seems, to some extent, to mitigate the process, and it is not unlikely that many of the so-called cures of "tuberculous peritonitis" have occurred in this type of case. The resemblance between the two forms may be so striking that only a microscopic examination of the nodules with the demonstration of the presence or absence of the tubercle bacilli will reveal the true nature of the case.

Another type of chronic hyperplastic peritonitis of tubercular origin is of great practical importance. I refer to a more or less localized form in which a tumor-like mass is produced. The great omentum may be matted into an irregular lump, or the process may be most marked in some part of the intestinal tract, notably about the appendix and cecum. In other cases the small and the large intestines have been found contracted into a ball. This form is liable to be mistaken for carcinoma. Lartigau[12] has collected the literature on this subject. It is important to recognize this variety, for many cases are amenable to operation and of course the prognosis is very much better than in the case of carcinoma. In a case reported by Lartigau of a very peculiar form of hyperplasia without caseation, the disease was proved to be tubercular, and was entirely confined to the wall of the bowel without accompanying peritonitis. Extensive peritoneal adhesions may, however, form about a similar tubercular mass involving the cecum, as in a case reported by Koerte.[13] In other cases the great omentum has been involved as well, as shown by Routier[14] and Tédenat.[15] While these cases are examples of a local or sporadic distribution, they are undoubtedly etiologically of the same nature as the diffuse form with effusion, for the *Bacillus tuberculosis* has been detected in the hyperplastic tissue.

It is important to recognize the existence of this peculiar form since in the early stages it is perfectly amenable to operative measures, while if allowed to go on the process spreads, extensive adhesions form, and it becomes impossible to remove the mass. I believe

that in all cases of tumor-formation about the ileocecal region or in the mid portion of the abdominal cavity an exploratory laparotomy is justifiable, for if a too ready diagnosis of carcinoma be made and the patient left alone he is nearly always condemned to death by intestinal obstruction or dissemination of the tubercular process, while in suitable cases operation may be followed by complete cure.

A third form of hyperplastic peritonitis is that associated with carcinoma. It is, of course, well recognized that sero-fibrinous or fibrino-purulent peritonitis may arise as a complication of carcinoma of the peritoneum, but, so far as I am aware, scarcely any attention has been given to the hyperplastic form in this connection. Nothnagel[16] refers to an indurative and deforming peritonitis as occasionally met with, but I have been unable to find any extended references to that particular type associated with hyaline degeneration. The cases afford great similarity to those already described, for there is a chronic course, more or less cachexia and ascites, with the formation of nodular masses in the abdominal cavity. One such instance came under my notice recently:

CASE 4.—Male, aged 46; alcoholic and syphilitic; for three or four years had been complaining of palpitation of the heart and oppression in the chest. Three weeks before being admitted to the Royal Victoria Hospital he noticed swelling of the abdomen and of the left leg. On admission the abdomen was tense and greatly distended, with evidence of fluid. The appetite was poor and there was tendency to constipation. He suddenly developed pain in the abdomen and died in a few moments.

Autopsy.—A very singular condition of things was found at autopsy. The peritoneal cavity contained 4300 c.cm. of straw-colored fluid with flakes; the mesentery was shortened, thickened and pearly in appearance; the great omentum was much contracted and contained a number of firm nodules about the size of walnuts and of a yellowish color, with some congestion of the capillaries on the surface, and lay in close contact with the stomach as a firm nodular cord extending across the abdomen midway between the xiphoid and the umbilicus; the parietal peritoneum was thickened, especially in the upper part of the cavity and was of a pearly-white, hyaline appearance, presenting a multitude of shallow depressions or pits. In other parts where the hyaline change was not so diffuse it formed tree-like masses about the vessels. Here and there on the intestines were small flat pearly nodules. Similar nodules were seen on the suspensory ligament of the liver and on the under surface of the diaphragm. Along the mesenteric attachment of the descending colon were numerous nodular growths identical with those in the great omentum. The stomach was contracted and its wall hypertrophied. On the lesser curvature posteriorly near the cardia was a chronic cancerous ulcer. There was some hyaline thickening of the liver capsule, especially near the gall bladder. On the surface of the spleen were scattered thin fibroid plaques of pearly-white hyaline appearance.

Microscopic Examination.—This showed that the peritoneal membrane presented proliferation of fibrous tissue with hyaline change. The primary condition was a scirrhous cancer of the stomach extending into the peritoneum; the nodules in the great omentum and mesentery were scirrhous cancer, as were also the hyaline-looking plaques on the surface of the intestines. It is singular that there were no metastatic deposits in the viscera, but instead a diffuse dissemination of carcinoma throughout the peritoneum. Death ensued from pulmonary infarct due to a loosened thrombus of the left iliac vein.

The exact nature of the peritonitis which complicates carcinoma is as yet obscure. The more acute and the subacute forms in some cases are due to perforation of cancerous ulcers in the hollow viscera or to secondary infection of the cancer-mass and its neighborhood. The hyperplastic form may possibly depend on infection with microörganisms of low virulence, but it is debatable how far the overgrowth of tissue is dependent on inflammation. It is more probable that, in addition to an inflammatory process, we have diffuse carcinosis leading to marked proliferation of fibrous tissue, such as is usually the case in the scirrhous variety. The combination of inflammation with neoplasia would exactly reproduce the picture of hyperplastic peritonitis. In the case in question the ascites resembled an inflammatory exudate rather than a transudate, and, in fact, no condition was found at autopsy which could have brought about obstruction, either in the portal system or in the inferior vena cava. I am strongly inclined to think that a secondary infection of the peritoneal cavity had taken place, possibly from the carcinomatous ulcer of the stomach. Until more cases are studied, however, many of these questions can not be settled definitely.

From a consideration of the foregoing cases I would suggest the following as a suitable classification for the disease:

Chronic Hyperplastic Peritonitis.

Sporadic.		Diffuse.	
Simple.	Tuberculous.	Simple. Tuberculous.	Carcinomatous.

DIAGNOSIS.

In conclusion a few words as to diagnosis may be given. The local forms of hyperplastic peritonitis, with the single exception of that form affecting the cecum or other parts of the intestinal tract, give rise to no manifestations that suggest their presence. The discovery of a large nodular mass in the neighborhood of the cecum of very chronic development and without marked signs of cachexia should always suggest tuberculous hyperplastic peritonitis, or at least involvement of the intestinal wall. When the process is diffuse four diseases come specially into mind: (1) simple chronic hyperplastic peritonitis, (2) tubercular peritonitis, (3) cirrhosis of the liver, and (4) carcinoma of the peritoneum, since in all there may be ascites, with abdominal pain and in most the formation of nodular tumors in the abdomen. Simple chronic hyperplastic peritonitis may be suspected if there be extreme ascites, and little or no anasarca, especially if with these signs there are evidences of an adherent pericardium or right pleura. A history of previous infective disease, gastric or intestinal ulcers, gallstones, will be suggestive of this condition.

The clinical picture is often dominated by signs of adherent pericardium or perihepatitis, and, in fact, unless perihepatitis be present the disease can probably not be diagnosed. Portal congestion is absent and there is no marked disturbance of digestion, no hematemesis nor melena; jaundice does not occur unless gallstones be present. The liver may be enlarged or small, but is rarely warty. In the tubercular form the ascites is not so great and the fluid is more apt to be sacculated, while abdominal pain and tenderness are more marked. Pigmentation of the skin has been observed. Careful examination should be made of the lungs, glands, testes, ovaries and fallopian tubes for evidence of a primary tubercular focus. The disease is more common in females than is the simple form. The distension of the abdomen is often uneven, owing to the irregular dilatation of the intestines. A hemorrhagic exudate is more in favor of tuberculosis or carcinoma than the simple peritonitis. Hectic fever is not uncommon, but cases may run without fever and intestinal symptoms may be in the background. Tuberculin injections may be tried in suitable cases. In cirrhosis of

the liver, dyspeptic disorders, alcoholism or syphilis are prominent etiological factors; portal stasis is marked; nausea, vomiting, hematemesis, melena and the various signs of portal obstruction differentiate this form from the "icing-liver" type of Curschmann. The great omentum is never nodular, as in the form of chronic peritonitis. Jaundice occurs in 27 per cent. of cases; the liver may sometimes be felt to be warty. Cerebral manifestations are not uncommon. As Hale White[19] has pointed out, when tapping becomes necessary the patient rarely lives long. On the contrary, in simple hyaloserositis the abdomen may be tapped a great number of times and the patients may live for years in comparative comfort.

In carcinoma the patient is usually advanced in years and cachexia is marked. Careful examination of the stomach and, in the female, the ovaries should be made; a hemorrhagic or chylous or pseudo-chylous ascites is in favor of carcinoma. The hemorrhagic exudate is somewhat less frequent in the tubercular form. It is doubtful whether the presence of peritonitis, unless of the perforative variety, can be diagnosed with certainty when complicating peritoneal carcinoma. Abdominal pain and tenderness might in some cases suggest it or the presence of a friction rub. In carcinoma the disease is fairly rapid.

TREATMENT.

Complications or special symptoms may call for appropriate remedies, but the treatment is essentially surgical. It has long been known that tuberculosis of the peritoneum has been apt to disappear after abdominal section, and indeed without it, and a simple hyperplastic peritonitis has been occasionally benefited by this procedure. Especially in the form of hyperplastic tuberculosis localized to the cecal region resection of the affected part may result in complete cure. Operation in some cases may be called upon to relieve obstruction.

For the simple form, tapping is usually necessary at increasingly frequent intervals. With regard to medicinal measures, diuretics, especially caffein, have been recommended in the hope of diminishing the ascites. The patients should be kept in the best hygienic surroundings.

In the carcinomatous peritonitis the outlook is, of course, hopeless.

REFERENCES.

1. Philadelphia Med. Jour., Nov. 12, 1898.
2. Berliner klin. Woch., December, 1897.
3. Deutsche med. Woch., Jan. 7, 1892.
4. Prager med. Woch., 1893.
5. Path. Anat. 5. Aufl. iii, s. 138, 1861.
6. Path. Anat. 8. Aufl. ii, s. 654, 1895.
7. Zuckergusshern, Deutsche med. Woch., April 17, 1902.
8. Studies from the Royal Victoria Hospital, Montreal, vol. i, No. 3.
9. Deutsche med. Woch., 1884, p. 564.
10. Quoted by Bauer, Von Ziemssen's Cyclopedia, 1878; Eng. Trans., vol. viii, p. 292.
11. Allg. Wien. med. Zeit., iv, 1902.
12. Journ. of Experimental Med., vol. vi, No. 1.
13. Deutsche Zeit. f. Chir., 1894-5, lx, p. 562.
14. Cited by Coquet, Thèse de Paris, De la Variété Chirurgicale de Tumeurs Coecales Tuberculeuses, 1894, p. 28.
15. Cited by Ibid. Thèse de Montpellier, De la Tuberculose Intestionale à forme Hypertrophique, 1898, p. 12.
16. Spec. Path. u. Therap., Intestines and Peritoneum, p. 742.
17. On Multiple Serositis. Trans. of Coll. of Phys., Phila., 1902.
18. Pericarditic Pseudocirrhosis of the Liver. Trans. Chicago Path. Soc., April, 1902.
19. Guy's Hosp. Rep., 1893, vol. xlix, p. 1.

DISCUSSION.

DR. W. M. WELCH, Baltimore—Dr. Nicholls' description and classification of these interesting forms of chronic peritonitis are most commendable. I have been interested in a number of the forms which he describes, especially in the diffuse chronic thickenings of the peritoneum associated sometimes with carcinoma, particularly with cancer of the stomach and of the ovaries. In some of these cases the fibrous thickening is limited to the wall of the stomach, in others it may affect a large part of the peritoneum. It may be impossible to recognize the existence of cancer in some of these cases without careful microscopic examination. There may be no circumscribed tumor, no ulceration of a mucous surface, and the nests of cancer cells may be relatively small and far apart. The disease may present itself to the naked eye as simply a diffuse fibroid thickening of the gastric and intestinal walls, with perhaps similar thickening of the peritoneum elsewhere. Both simple and colloid types of carcinoma may appear under this form.

There is another condition to which I should like to call attention in this connection, namely, the occurrence of richly vascularized, thin layers of new connective tissue, particularly on the pelvic peritoneum, associated with small hemorrhages and blood pigment. This condition is analogous to chronic hemorrhagic pachymeningitis, the morbid process being of the same general nature in both affections.

The chronic proliferative forms of peritonitis associated with tuberculosis are, of course, well recognized. There occur, as Dr. Nicholls has pointed out, diffuse or more circumscribed forms of peritoneal fibrosis, especially about the liver, but also over the spleen, the under surface of the diaphragm, and elsewhere, the etiology of which is very obscure.

DR. E. R. LECOUNT, Chicago—I have met several cases. One of them had to do with a liver which was encased in a shell, resembling that of a cocoanut, from which the liver could easily be lifted out; the capsule then maintained its former shape when laid on a flat surface.

I think Dr. Nicholls is to be complimented in his arrangement of these diseases, and for not becoming entangled in the subject of "pseudo-cirrhosis."

DR. A. G. NICHOLLS, Montreal—The reference made to pachymeningitis, by Dr. Welch, as a disease having some of the anatomic peculiarities of this *zuckerguss* condition, is interesting, and I am of the opinion, as he is, that there is a close analogy between this disease and what may be termed "pachyperitonitis." Cases such as I have described are not entirely new and the only point on which I would claim novelty is in the recognition of the fact, which has not been brought out before, that the *zuckerguss* form of peritonitis has at least a threefold etiology—simple, tubercular and carcinomatous.

THE GROWTH OF THE TUBERCLE BACILLUS AND ORGANISMS RESEMBLING IT ON FRUITS AND VEGETABLES.*

M. J. ROSENAU, M.D.

DIRECTOR HYGIENIC LABORATORY, U. S. MARINE-HOSPITAL SERVICE. WASHINGTON, D. C.

At one time the tubercle bacillus was looked on as standing in a class by itself, sharply differentiated from all other micro-organisms, but not long after its recognition two important points came to light; first, that there are other organisms, especially the streptothricæ, that have the power of producing lesions resembling the tuberculous granulomata; and secondly, that there are other organisms resembling the tubercle bacillus in some of its biologic and staining characteristics.

The fact that the tubercle bacillus stains with difficulty and decolorizes with corresponding difficulty was for a long time regarded as peculiar to this organism. This staining peculiarity was looked on as a definite and final test, quite as specific as a chemical reaction. But now we know a whole group of acid-proof bacteria widely distributed in Nature, that resemble the tubercle bacillus closely enough in certain features to cause confusion and errors in diagnosis. These organisms are found in butter, milk, on grass, in manure, and even in certain lesions in the body.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. Alfred Stengel, L. Hektoen and Winfield S. Hall.

They have been found, for instance, in an ovarian cyst and in the nasal secretion of healthy and diseased mucous membranes; also in sputum. They stain with carbol-fuchsin exactly similar to the tubercle bacillus and resist the decolorizing action of alcohol and acids, that is to say, they are acid-proof.

While these bacteria may readily be distinguished from the true tubercle bacillus by their cultural characteristics or by their pathogenic action in animals, it may readily be seen how they have been the source of error in diagnosis and how they have further complicated the difficult problems of tuberculosis. Some of these organisms stain and decolorize more readily than others. That is to say, they do not all have the same high degree of acid-proof qualities presented by the tubercle bacillus itself. Therefore this also causes confusion in the study of leprosy, especially in staining the *Bacillus lepræ* in nasal secretions.

We can no longer make a scientific diagnosis of tuberculosis by simply staining the bacilli in the sputum, although for clinical purposes this method remains useful. It is necessary to isolate the organism in pure culture and study its pathogenic action on animals. This takes a long time, often a matter of weeks and months.

Therefore, the problem confronts us of finding a media on which the tubercle bacillus will grow quickly in order to save time, and thereby render the process of cultivation a practical one for clinical work.

Of the various media tested we have so far had best success with certain vegetables and fruits. While this work which I am now presenting to you is not yet completed, I am at present able to state that there are vegetables on which the tubercle bacillus grows quite as well, if not better, than on potato. Beet and cauliflower seem especially favorable. Sometimes the growth appears more quickly on these vegetables than on potato.

A good growth of the human variety has been obtained on the following: potato, cabbage, cauliflower, turnip, carrot, squash, celery, egg plant, beet and radish, and a small or doubtful growth on apple, onion, cocoanut and pineapple.

It is nothing new to grow micro-organisms on vegetable media, although I have not heard of anyone growing the tubercle bacillus on the various substances mentioned, except potato.

For comparison with the tubercle bacillus, I herewith present for your consideration growths on the same fruits and vegetables, of avian tuberculosis, bovine tuberculosis, Karlinski's bacillus of nasal secretion, Rabinovitch's bacillus of butter and margarine, and Moeller's grass bacillus. These growths present a very suggestive picture. We seem to have here a tubercle group, just as we have a colon group. There is a very considerable difference between the extremes of this tubercle group, also several remarkable points of resemblance. If the tubercle bacillus of man has been specialized by a process of evolution from the more lowly grass bacillus of Moeller, or if the grass bacillus is a degenerate saprophytic form of the tubercle bacillus there are several missing links between the two. The saprophytic acid-proof organisms resembling the human tubercle bacillus grow readily on the ordinary media used in the laboratory, both at room temperature and in the incubator. A visible growth is often obtained over night. They also have more color than the tubercle bacillus, usually a salmon-red or yellowish tint. The human tubercle bacillus grows as a crinkled, rugous, dry, mould-like mass. Some of the cultures of the acid-proof organisms resembling the human bacillus have a dry, corrugated growth on various fruits and vegetables which is very suggestive.

These few remarks are only given with the specimens herewith presented as a preliminary note of the work now being done on this group of micro-organisms in the hygienic laboratory of the Marine-Hospital Service, and a further report will be made at a later date.

DISCUSSION.

DR. JOSEPH MCFARLAND, Philadelphia—Did the growth take place in direct proportion to the amount of sugar these vegetables contained?

DR. C. A. SMITH, Atlanta, Ga.—How does Dr. Rosenau prepare his media?

DR. M. J. ROSENAU, Washington, D. C.—The media are prepared just as we prepare potatoes as a culture medium in test tubes. With an apple corer I cut out a solid plug of the fruit or vegetable, this cylinder is cut in two and each half is placed in a test tube in the bottom of which is some 5 per cent. glycerin bouillon. This is then sterilized fractionally on a number of successive days. Those we prepared to keep through the winter were saturated with glycerin bouillon by filling the test tube almost full, and when we are ready to use the media we pour off the excess of fluid, leaving only enough at the bottom to keep the vegetable moist.

As to the relation between the amount of sugar in the different vegetables and the growth obtained thereon, this is a very interesting feature. I have not gone into this at all yet, but am doing so from another standpoint and hope to be able to say more about it another time.

THE DIAGNOSIS OF BRAIN ABSCESSES.*

HERMAN H. HOPPE, M.D.

Lecturer on Nervous Diseases, Medical College of Ohio, University of Cincinnati; Professor of Nervous Diseases, Clinical School, City Hospital, Medical Department, University of Cincinnati; Neurologist to City Hospital.

CINCINNATI, OHIO.

We encounter difficulty in diagnosing brain abscesses in two ways: First, in determining whether or not an abscess is present, and in the second place, in locating it. These difficulties are entirely out of proportion to the difficulty found in diagnosing other brain lesions, say, for instance, tumors and cysts. In the former condition the symptoms are not only frequently obscure and indefinite, but for a considerable period may be absent altogether; the abscess may be in a latent state. In tumors and cysts time is not of such very great importance, a few days or a few weeks may elapse and the diagnostic points may be allowed to develop themselves, without there being any added perils to the patient. In abscess, however, time is of great importance, a few days, even twenty-four hours, may determine whether or not the individual's life can be saved. It is in the latent or developmental period of a brain abscess that surgical interference offers the best chances; when the abscess has ruptured and the stage of manifest development has set in, the outcome of the surgical interference is, to say the least, very doubtful. The great problem, therefore, is to be able to diagnose the presence and if possible locate an abscess in its latent period or at least in the very earliest stage of its period of positive manifestation.

In order to bring this subject before the section I am going to cite for you a number of cases which were either operated on or which were suspected of having brain abscesses and in which the subsequent develop-

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Nervous and Mental Diseases, and approved for publication by the Executive Committee: Drs. Frederick Peterson, Richard Dewey and H. A. Tomlinson.

ment failed to confirm the suspicion. The importance of the subject is manifest and we all are in the predicament very often in just such cases as the following, as to whether we shall advise surgical interference or not. The question is entirely different in brain tumor. In the latter cases the question of surgical interference never arises unless the tumor is located in the cortex, but in every case of abscess we may at least hope that surgical interference can remove the trouble. There are but two solutions to every abscess of the brain, death or surgical interference. Rosl raised a two-fold objection to operations for abscess: 1, The tendency of abscesses to become encapsulated; 2, the difficulty of diagnosis. There can not be any doubt about brain abscesses becoming encapsulated, but we know from clinical experience as well as from the record of autopsies, that the single abscesses, at least, do not remain encapsulated. The same process of softening which is seen around brain tumors and cysts also occurs around the brain abscess, and invariably death results from rupture either into the lateral ventricles or through the cortex. Superficial abscesses on very rare occasions have been known to rupture through the cribriform plate of the ethmoid or the roof of the middle ear, or even through an old fracture, but these fortunate exceptions can not enter into consideration of treatment. The second objection, the difficulty of diagnosis, of course, is valid, but should only urge us to make greater efforts toward the relief of a condition which may offer a favorable surgical outcome. The difficulties are not as great as formerly and at times the diagnosis is even easy.

Given a certain group of signs and symptoms which lead us to suspect the presence of a brain abscess, the first point is the tracing of the source of infection. Bergman says that without the streptococcus pyogenes aureus there can not be a brain abscess. If this is correct then we should at least be able to find the source of infection. Now this is notoriously difficult. Pus-forming organisms always come from without. This is the most important and the first point; with the development of bacteriology the theory of idiopathic abscesses has collapsed.

BERGMAN'S CLASSIFICATION.

According to their origin Bergman divides brain abscesses into four groups, and for the purpose of studying the difficulties in the latent period the consideration of the etiology offers the best results.

1. Traumatic abscesses caused by an open scalp wound or a fractured skull.
2. Those abscesses resulting from a purulent inflammation of bone or bony cavities.
   (a) Otitic abscesses.
   (b) Rhinogenetic abscesses.
   (c) Abscesses due to caries of the bones of the skull.
3. Tubercular abscesses.
4. Metastatic abscesses.

TRAUMATIC ABSCESSES.

In traumatic abscesses the most important point to remember is that there must be some direct communication between the cranial cavity and the external world, an open channel through which the infection may travel. It is not necessary to have a fracture of the skull, as Case 1 will illustrate, but an open wound is absolutely necessary. I am well aware of the fact that there are cases on record of abscesses following mere contusions of the scalp, streptococci being brought to the bruised part by the cerebral arteries, but for practical purposes in suspected latent abscesses we should adhere to the fact that there can not be a traumatic abscess without an open channel of infection. This is usually an open scalp wound that has become infected, but it is not at all uncommon to have an abscess follow a fracture at the base of the skull and then the open channel is by way of the auditory canal, pharynx, or the frontal sinuses. In recent abscesses, following soon after the injury, this will not offer any difficulty, but in latent abscesses occurring weeks or months after an accident this point may be overlooked, especially where the original symptoms and signs of basilar fracture have not been very marked.

CASE 1.—M. R., female, aged 22, single, admitted to the Cincinnati Hospital Jan. 22, 1901. Mental condition such that history was unobtainable. Said to have been struck on the head by a chair on New Year's eve, since which time she has not been well. Further history than this can not be obtained at present time.

Examination.—Temperature, 100.4; pulse, 80; respiration, 20. When not disturbed lies quiet and seems to be somewhat stupid. Easily aroused, and apparently understands everything said to her. Can tell the name of some objects, while she can not of others. Knows the use of some of the objects she can not name. Can write (her name at least) but holds the pen loosely, and seems to have lost the finer movements of the fingers. Can not read, but attempts to spell out the words, calling almost every latter "C" or "R." She is fairly well developed and nourished. Swelling on left side of head above the ear, about three inches in diameter, the most prominent point of which is about two inches from the median line. Fluctuation is easily obtained. Pressure over this area causes a contraction of muscles of same side of face. Pupils moderately dilated, equal and react sluggishly to light. Muscles of eyes not affected. When lying quiet with eyes closed, there is an angle between upper and lower lids of right eye, but when asked to do so, can completely close both eyes. There is no ptosis. With above exceptions there is a right facial paralysis; absence of nasolabial fold, can not whistle or show teeth, saliva drools from right corner of mouth and tongue is apparently protruded to the right. Tongue slightly coated. Lips dry and cracked. Very slight paresis of right arm. Left arm and both legs all right. Reflexes normal. Knee-jerks diminished. Sensation normal (rough test). Babinski's reflex-flexion. Appetite poor. Bowels have moved and she has voided urine since admission. Urine amber, acid, 1018. Blood count: Reds 5,500,000; whites 13,400.

January 25: Temperature range a little lower. Paresis of right arm has increased. Aphasia about same; speaks a few words clearly and distinctly; writes her name and copies letters very well; does not do so well from dictation.

January 26: Is much better this morning; paralysis of face much better; when she laughs the face wrinkles almost equally on both sides; both corners of the mouth retract, but the right drags a little; strength in right arm better; holds pencil very well and writes much better; talks better and seems brighter.

January 27: Aphasia about the same; temperature 97.

January 28: Unchanged; temperature 99.8 last night.

Operation.—The operation was performed by Dr. Ransohoff. Chloroform. A semilunar incision was made in scalp through the fluctuating mass about four or five inches long, convex upward, center just about over the ear. Flap turned down. Upper part of temporal muscle softened and broken down into a nasty-looking granulating mass. No pus found. Cultures in blood serum and bouillon were taken from this mass. There was a small softened area in the skull just over the lower part of the Rolandic fissure, from which bloody serum was oozing. Trephine applied here and button of bone about size of quarter removed. This opening was enlarged by rongeur forceps until about four inches long and three wide. Dura very much thickened, red and injected, as if the site of recent inflammation over an area about 1½ inches in diameter over the lower end of fissure of Rolando. Cultures taken. Incision through dura, and aspirator needle thrust into the brain in various directions. No pus found. Veins somewhat dilated,

dura not sewed. Inner surface of scalp flap curetted and washed with 1-2000 bichl. Strands of silkworm gut passed through from one end of incision to other, for drainage. Scalp sutured with silkworm gut. Dry dressings.

January 29: Seems a little better this morning.

January 30: Aphasia much better, can say many words which she could not before operation. Temperature normal.

January 31: Aphasia still improving; wants to get up; Kl. ordered.

February 1: Aphasia almost entirely gone; sits up in bed; appetite good.

February 2: Improving rapidly; facial paralysis and aphasia nearly gone.

February 4: Head dressed; sutures not removed; no pus or bogginess.

February 12: Second dressing to-day; sutures removed; small drop of pus in lower end of incision; no bogginess; temperature has been up for past 2 or 3 days.

February 28: Complains of headache and pain over mastoid; nothing abnormal found in ear.

March 10: Improving nicely, although still has the pain over mastoid and a little above.

March 21: Discharged well.

In this case the abscess occurred without a fracture directly under the seat of a badly-infected scalp wound; the abscess was extra-dural and the location of the wound gave rise to the suspicion of an abscess. Had the scalp wound been located over an indifferent portion of the cortex, it would, to say the least, have given rise to a great deal of difficulty of diagnosis and might even have been overlooked.

This case illustrates another difficulty; we may have abscesses of the brain, following a scalp wound, without a fracture of the skull being present; the infecting agent can penetrate through the skull probably in this case by medium of a localized ostitis, and still this does not explain the penetration of the internal table which was intact.

CASE 2.—George Kling, aged 49. Was admitted to strong ward with diagnosis of delirium tremens. Patient has alternating periods of stupor and delirium. Can be aroused only slightly. History obtained from police stated that he was struck on head in a fight.

Examination.—Marked tenderness over right side of head, just above the ear; marks of contusion; paresis of left side of face, slight ptosis of right eyelid; right pupil smaller than left; pulse 72, temperature 99½. On account of mental condition, unable to make a more careful examination, but the patient is able to use both arms and legs.

There was gradual increase in the stupor, the temperature gradually rose to 103; on the fourth day a spastic paresis of right arm set in; on fifth day temperature rose to 104½. An abscess of the left psycho-motor area was suspected.

Operation.—A linear fracture of skull was revealed, tearing of dura mater and contusion and laceration of the brain tissue, but no abscess or pus formation. Recovery complete.

Here we have all the indications of a surface abscess: fever, delirium, low pulse, monoplegia, surface tenderness and no scalp wound. The operation revealed a linear fracture of the skull, a torn dura mater and a badly lacerated cortex without the slightest inflammation or pus formation. This last case is specially instructive. Our caution and delay in operating was justified by the results. It was only when there was no improvement, but rather an increase in the symptoms, that we decided on an operation. We can readily see how much better such an individual would be without an operation as far as the future is concerned. There is always more or less danger from shock, from cerebral prolapse, with its attending scar and subsequent danger of epilepsy, to say nothing of the large aperture in the skull which remains after the operation.

When a violent headache, mental hebetude, mild delirium, increasing somnolence and a slow pulse follow soon after an accident to the head, when the scar is still fresh and there is undoubted evidence of a recent injury, the diagnosis even then can be very difficult. I need not cite successful operations or the history of suspected abscess which turned out to be localized meningitis. They are too common an everyday occurrence in large general hospitals to require especial mention. But when a long time, months or even years, have elapsed between an injury and the development of symptoms which point to brain abscess, the difficulty becomes very great. Case 3 is of this character.

CASE 3.—Charles Legnore, aged 23, admitted for conjunctivitis. Had an accident to head followed by unconsciousness 18 months before. States that he has had epileptic seizures for 3 years, at intervals of once a month. Denies syphilis. Transferred to neurological service in a stupor after a series of convulsions. These convulsions began about a week ago, always beginning in left side of face and then extending over left side of body, afterward becoming general.

Examination.—Pain and tenderness over right mastoid and occipital region. Percussion brings on a convulsion in left facial. Stupor—can be aroused only very imperfectly; when put on his feet staggers and complains of vertigo; falls to left side. Marked paresis of left side of face, of left arm and left leg. Complete anesthesia and loss of reflexes on left side of body. No optic neuritis. Left hemianopsia seems to be present. Examination in other respects negative. Temperature normal. Urinalysis negative. Pulse 66. One week after admission to neurological service there was complete paralysis and anesthesia of left side of body.

Operation.—Was operated on by Dr. Ransohoff for suspected abscess of the right temporal lobe. Operation revealed a perfectly normal condition of meninges and cortex. Aspiration in all directions, no pus. Mental condition and delirium cleared up after operation. Patient became bright and cheerful. Paresis diminished very much. Epileptic convulsions occurred only occasionally. The operation revealed no cause either for convulsions or for the paralysis.

Here we have all the signs of a cerebral localized abscess; not one is wanting, nor is there any aberration in the history of the case, and still the operation reveals no abscess. The case remains under observation six months after the operation and is discharged as a hemiplegic with no apparent cause for the hemiplegia that can be found, unless we look on it as a very small abscess or area of softening in the internal capsule, probably the size of a hazel nut. But how such a small focal lesion could produce such violent general symptoms is a mystery. A similar case is reported by Oppenheim. Early traumatic abscesses are usually extra-dural or intradural, practically cortical in location and usually are detected by their focal symptoms or, what is more common, localized tenderness of the skull on percussion. But latent abscesses are almost invariably subcortical and are situated in the white substance just beneath the cortex. There is always a layer of healthy bone or brain tissue with intact meninges between the source of infection and the abscess. This increases the difficulty of diagnosis, not only before the operation, for we all know that subcortical lesions produce less manifest signs than cortical ones, but also at the time of operation when the surgeon is confronted with healthy calvarium, meninges and a normal-looking cortex.

One more point before leaving the consideration of traumatic abscess. Gunshot wounds, knife thrusts or compound comminuted fractures are more apt to be followed by abscesses than simple fractures. Moreover, wounds attended by a longer period of suppuration are

more apt to be followed by latent abscesses than those which have closed quickly.

ABSCESSES FOLLOWING MIDDLE-EAR DISEASE.

The difficulties in abscesses following caries of bone, especially middle-ear disease, are again two-fold. First, the difficulty of determining the presence of an abscess, not only in the acute, but especially in the latent period; secondly, of locating the abscess. In the period of acute manifestations of mastoid inflammation, especially in children, the signs and symptoms of the mastoid disease may simulate perfectly those of brain abscess, especially if the case is bedridden. The only absolute signs before the operation of brain involvement are cerebellar signs of a positive nature, or if the left side be involved, the occurrence of sensory aphasia. In doubtful cases, however, the bone and ear disease should first be attended to. Sinuses should be looked for and if the general signs of brain abscesses do not clear up after the operation, then a secondary operation may be indicated. Abscesses from middle-ear trouble are, however, notoriously latent, and this fact gives us great difficulty. Let me illustrate by an appropriate case.

CASE 4.—Mary Corcoran, aged 20, American, single, cigar maker, family history negative. Had a fall on head in childhood; there was, soon after, a discharge from right ear. Always had nasal and throat catarrh. In July, 1901, had a mastoid operation which was successful; no more discharge from this ear. Since then complains of headache, pain and soreness in occipital region on right side. Pain in the head is increased by sneezing and coughing; has vertigo and staggers at times like one intoxicated; usually staggers toward right side and says that she would fall if she did not grab hold of something. There is a constant fear of this vertigo and staggering. No vomiting; general health is very good. Sleeps and eats well; no constipation.

***Examination.*—Mental condition good; no hebetude; no impairment of memory; examination of right ear shows a healthy condition of the bones and mastoid process has healed completely. Ophthalmoscopic examination revealed some slight congestion of the veins of the right papilla, nasal margin sharply defined. Temporal margin a little indefinite. In every other respect the examination is negative.**

Treated with tonics and protoiodid. All doubtful cerebellar symptoms disappeared after three months of treatment.

The most important contribution concerning brain abscesses in middle-ear trouble has been given to us by Koerner. He proved that we could accurately locate the seat of the abscess in the brain if we knew which part of the temporal bone was diseased. Koerner made autopsies on 109 cases of brain abscess; 86 times the temporal bone was diseased to the dura mater, 8 times half way through the bone, and in only 15 cases was it healthy. In 40 abscesses, 38 times the seat of abscess was immediately below the diseased bone, and the dura was involved. The dura was frequently adherent to brain and diseased bone.

If the roof of the middle ear is diseased the abscess is in the temporal lobe. If the mastoid cells or the posterior portion of the petrous portion of temporal lobe is the seat of inflammation the abscess is in the cerebellum; the middle lobe of cerebellum is involved if this purulent inflammation passes through the semi-circular canals. Bergman speaks strongly in favor of the above method of localization.

Another point in diagnosis is, that otitic suppuration when associated with a cholesteatoma, whether the latter be primary or secondary, is more apt to cause abscess of the brain than an uncomplicated one. The reason for this is given by Kirchner. The cholesteatoma penetrates the bone; in its growth ramifies the Haversian canals for a considerable distance around its base; makes the bone thin and friable, fills it with large cavities, and in this way renders the corrosion by the pia an easy matter and paves the way for an abscess. In addition to this the pus is dammed back by the cholesteatoma and the breaking through and the corrosion becomes an easily accomplished fact. In these cases the pus is thus decomposed and cholesteomatous masses float in and on it. Virchow, in 60 cases of otitic brain abscess, found one-fourth with cholesteatoma. Two other factors predispose to the formation of otitic abscesses: *a*, the course of suppuration in acute or subacute exacerbations, the pus being fetid; *b*, the presence of large granulation masses in the middle ear, or deep in the external ear; the granulation masses acting as a dam to the pus. Thus we see we can obtain important diagnostic data from the examination of the external ear. Another important diagnostic point in otitic abscesses is the fact brought out by Koerner, that otitic abscesses are oftener on the right side than the left. Herzberg showed that the transverse sinus on the right side lies deeper in the bone than on the left. Koerner proved this to be the case in 70 per cent. of his autopsies. This causes the bone, therefore, to be thinner and more easily perforated by a cholesteatoma or fragment of dead bone (by the suppurating process).

When the origin of the abscess is in the roof or attic of middle ear, the bone having become inflamed or corroded, the first step is a purulent pachymeningitis, and this is followed either by an extra- or intra-dural abscess. The intra-dural abscess is at first connected with the dura mater, afterward becomes separated by becoming encapsulated and then becomes subcortical in the temporal lobe. Often we have both extra-dural and intra-dural or brain abscesses at same time; this is very important to remember (E. Hoffmann). We can diagnose an epidural or extra-dural abscess (Bergman) only by the following signs; by external signs when the pus escapes either through middle ear, through temporal bone or mastoid cells. Abundant flow of pus, of short duration, will arouse suspicion of abscess, especially if the signs of previous increased intra-cranial pressure disappear with flow of pus. Discharging fistulæ and especially edema or fluctuating abscess over the mastoid bone, lead to diagnosis of an epidural abscess of the middle or temporal fossa.

The difficulty of locating an otitic abscess is increased by the fact that middle-ear suppuration is often associated with suppuration of the mastoid process. Then we must look for caries or ostitis, because if the latter process is either in the antrum or in the mastoid it is liable to determine the seat of abscess.

A badly located or a small tympanic perforation is apt to cause brain abscess by damming back the pus. Otitic abscesses have an imperceptible and unknown (as to time) beginning; never sudden; trauma plays no rôle.

Otitic cerebellar abscesses are very difficult to diagnose and are frequently complicated with sinus thrombosis and lepto-meningitis and masked by the latter. We look for cerebellar abscesses in caries of the sigmoid fossa, of the sulcus transversus, of the labyrinth and the mastoid cells (Koch). Koch has proven that cerebellar abscesses before the age of 10 are rare (2 out of 105). Hence, prior to this age we must look for temporo-sphenoidal abscesses.

The cerebellar abscesses are found in the lateral and at times in the median surface of the hemispheres and

usually in the anterior lower surfaces, and in such a way that caries of the sigmoid sulcus cause abscess of the lateral and the caries of the labyrinth, of the lower median surface.

Koch divides symptoms of cerebellar abscess into groups according to three types of abscess:

1. Diagnosis made from marked cerebellar focal signs.
2. Marked signs of general brain pressure with but few and indistinct focal signs.
3. Neither local nor general symptoms are well marked, but the nature of the suppuration is in the mastoid region and the finding of fistulous openings through the dura leads to discovery of the abscess in the cerebellum.

The general symptoms are those of general brain pressure, but the pulse is very slow, the vomiting rare and optic neuritis occurs in but one-fourth of the cases. General pressure symptoms in cerebellar abscesses are due to dilatation of the ventriculi.

Rhinogetic abscesses are due to purulent processes in the upper nasal passages and the sinuses connected with them, viz.: The frontal, sphenoidal and maxillary. The route which the pus may travel is through the cribriform plate, along the horizontal plate of the ethmoid, or through the orbital cavity along the optic nerve. Simple operations, like the removal of polypi or of adenoid vegetations of the naso-pharyngeal plate, may, if followed by infection, cause cerebral abscesses. Just as in otitic abscesses, the inflammation and caries of bone of the above-named cavities cause an extra-dural and intra-dural abscess, a leptomeningitis and cerebral abscess, with an associated phlebitis of the sinus cavernosum, the difference being the greater frequency with which they are associated in the same case. The course of the inflammation from the malar sinus is through the orbit, by the way of the orbital veins. Out of 20 abscesses of the brain due to the above source of origin, 19 were found in frontal lobe and only one in the temporal.

This great frequency of abscesses of the frontal lobe following the above-named diseases makes the diagnosis easy when the general signs and symptoms of abscess are present. The localization is made from the seat of the pus infection, but, like tumors of the frontal lobes, the general and special signs may be absent. In a case on record in the Cincinnati Hospital service of Dr. Murphy, the boy was in the wards for fully sixty days for frontal sinus disease; he was up and about daily and was considered bright, active and intelligent. Two days before death he suddenly developed the general signs of a brain abscess, the operation revealed an abscess of the size of a duck's egg, discharging foul, offensive pus, which must have been present for months.

TUBERCULAR ABSCESSES.

In connection with tubercular abscesses two things are positive: One is that after the formation of a tubercle in the brain, a purulent inflammation may occur around the tubercle, and in reported cases the tubercle may completely break down, a microscopic examination being necessary to determine its tubercular origin, and, secondly, Koch has shown that the cause of the purulent inflammation is the dead tubercle bacillus. These tubercular abscesses may explain the so-called idiopathic abscesses and are of special interest in one direction, namely, that we may have all the indications of a cerebral abscess without any known traumatic or pus cause and still be justified in the diagnosis and the operation.

The difficulty in diagnosing tubercular abscesses is two-fold: In the first place there is an absence of all known causative factors in the case as it lies before us, and, in the second place, the general symptoms of tuberculosis overlap those of the brain trouble, and distort the clinical picture. These abscesses are very frequently in the cerebellum and then by producing basilar symptoms simulate very closely either a tubercular or syphilitic meningitis. A case of the latter character occurred in the Cincinnati Hospital on the service of Dr. Jos. Eichberg. Let me introduce a case which illustrates the difficulties named above:

CASE 5.—F. E., male, aged 42. Admitted to the Cincinnati Hospital March 4, 1901, in a state of syncope and no history obtainable except that he had had headache for some time and had been dizzy; uses alcohol and tobacco. Patient very much emaciated; lies in bed and seems to observe everything that is going on; expresses no ideas; when spoken to does not always answer; sometimes it is several minutes before he replies; does not utter any connected phrases; complains of severe pain. Left pupil dilated; both react to light and accommodation. Paresis of right side of face.

Necropsy.—By Dr. D. I. Wolfstein. Brain when taken out was very soft and flabby, the left lobe being especially so on the cortical surface in an area extending downwards from the lower half of anterior frontal convolution to the base of the brain and bounded posteriorly by the fissure of Rolando, inferiorly by the Sylvian and anteriorly impinging on left inferior, frontal and middle frontal convolutions was an area of softening; after hardening in formalin this proved to be a globular mass, which could be shelled from its surroundings and which was hollow and filled with greenish pus. Brain tissue surrounding mass was also extensively softened; whether this is a broken-down tumor or a tubercular abscess microscopic examination must determine. The symptoms were aphasia, right facial paresis, some slight paresis of right arm and loss of right leg, ataxia, and patient lay in a state of stupor. Macroscopic examination of pons revealed nothing abnormal, likewise in cord. Heart small and flabby. Lungs, left, tubercular, lower lobe full of miliary tubercles, and one small abscess. Liver fatty; spleen friable; kidneys small, hyperemic; extremities negative.

Histology.—Brain: From what was a cyst or cavity filled with purulent material, sections were made and stained according to two methods of Mallery's to determine the presence of any overgrowth of glia tissue. This the specimens examined did not show. The staining was hematoxylin eosin. The wall of the cyst, which was of about 1/32 m. in thickness, shows a very intense small-celled infiltration with an inner layer next the cavity ragged, and in many places broken-down and degenerated; while no typical tubercles were found, there were many rather small suspicious nodular collections of cells which were taken to represent tubercular areas. The outermost area shows a layer of thickening which we think was due to glia proliferation, in spite of the fact that the miliary specimens were negative. There was also meningeal thickening over the area. The cord was not examined as there were no symptoms presenting.

The location of this abscess, tubercular, secondary to pulmonary tuberculosis, explains the aphasia, and also the facial paresis, as it involved the lower half of the frontal region on the left side (speech center) and extended back to the pre-central convolution. The arms and leg centers were not included in its territory. No study of secondary degeneration was made, as the brain was in a state of decomposition when obtained.

METASTATIC ABSCESSES.

Metastatic abscesses are usually pyemic in origin, multiple, and usually not good subjects for diagnostic skill. Bergman says, however, that at times they are solitary and operable. MacEwen says that solitary metastatic abscesses constitute one-third of the pyemic abscesses and Martin found in 22 cases 9 of pyemic metastatic abscesses of the brain. The origin of these metastatic

brain abscesses is usually the lung. Gangrene, abscess, empyema, pleurisy or bronchiectasis, but they may be secondary to gangrene in any part of the body. Like all cerebral emboli the metastatic abscess if solitary is usually found in the left carotid region (Martin's 7 cases out of 9).

SO-CALLED IDIOPATHIC ABSCESSES.

To Bergman's classification of abscesses a fifth group should be added, namely, the group not so much of idiopathic abscesses, but of abscesses in which there has been no previous deposit of pus in the body from which the streptococci could be drawn. This leads us to the discussion of so-called idiopathic abscesses. That there can be no idiopathic abscess in the sense of an absence of some cause for suppuration we must admit. But we know that we can have primary brain abscesses which can not be grouped under any of the four preceding heads. This is an exceedingly important point to remember when we are confronted with the necessity of making a diagnosis or differential diagnosis. Martin has worked up this subject and points out four cases of Strümpell's observed during an epidemic of cerebro-spinal meningitis in which no other cause could be found. Oppenheim says that there is no doubt whatever that the influenza bacillus can cause not only a meningitis or an encephalitis, but that also an abscess may complicate the meningitis, the latter may disappear and the former may remain behind, or the abscess may occur independently of a meningitis. He also reports cases in two articles in which he calls attention to the fact that acute non-purulent cortical encephalitis may simulate brain abscess. At this point I would like to introduce a very interesting case in which the clinical diagnosis was either brain abscess or purulent meningitis.

CASE 6.—Lincoln B., aged 38, married. Had deafness and ear trouble since childhood. Pneumonia 10 months ago. Denies syphilis. Has been demented for 3 days (queer actions), brought to hospital in patrol. On admission was maniacal, after 24 hours alternate periods of apathy, depression, with difficulty of speech, alternating with delirium and mania.

***Examination.*—Pupils equal in size, react to light; slight divergent strabismus; ophthalmic examination negative; can not protrude tongue; responds sluggishly to questions; complains of pain in head; discharge of fetid pus from right ear; extremities weak, rigid with increased reflexes. Babinski's reflex on left side; Kernig's sign well marked; slight trace of albumin in urine; pulse varies from 60 to 70, temperature from 98 to 101.2.**

The difficulty of speech increased during the next few days, the stupor became more marked and a twitching of the muscles of right side of face developed; afterward the rigidity with marked twitching but no real convulsions of all four extremities; the pulse going to 130, the temperature to 102.

During next few days some improvement; then developed a convulsion beginning in the right arm and then becoming general. This was followed by coma and death.

The autopsy showed no abscess or purulent meningitis, nor even any congestion, but a marked case of interstitial nephritis.

Here we see how a case of uremia may simulate brain abscess or purulent meningitis. Gussenbauer and Von Beck have published similar cases. Gussenbauer's case was not cleared up at all, Von Beck's proved to be a case of hemorrhage encephalitis of the pons.

SYMPTOMS OF ABSCESS.

The consideration of the symptoms of brain abscess is rendered easier by dividing them into three groups:

1. Symptoms due to deep-seated suppuration.
2. Symptoms due to increased intra-cranial pressure.
3. Focal symptoms.

1. If there is an absence of pus in other parts of the body and there is no other cause, the occurrence of fever with other signs of sepsis may aid us to form a diagnosis. Fever and the attendant signs of sepsis, viz.: general malaise, loss of appetite, headache, occur in remissions and exacerbations, with complete remissions. This variation is dependent upon the successive increase in size of the abscess and is characteristic. The fever in the latent or preactive stage is usually low, rarely over 101, usually between 99 and 100, although in the acute period of active manifestation it reaches a higher mark. Slight chilliness with a rise of fever occurs usually at night. The patients frequently look sickly pale, jaundiced and emaciated. Typical chills may occur in abscess, but repeated chills are rather indicative of septic sinus thrombosis. A high continuous fever speaks rather against abscess and for purulent leptomeningitis, sinus thrombosis or extra-dural pus. The presence of fever in suppurating middle ear or mastoid disease is no indication of abscess.

Bergman and Broca both maintain that the surface temperature is higher on the side of the abscess. The temperature may be normal for a long time during the latent period, and MacEwen called attention first to the frequency of subnormal temperature. In the period of acute manifestation the headache is extremely violent and constant. During the latent period it is intermittent. Characteristic of the headache is its regular increase during the evening fever. This headache may be absent during the rest of the day, is increased by anything that increases the intra-cranial pressure.

In otitic abscesses, and in others also, the pain may be localized over the abscess, and is much increased by percussion. This localized tenderness does not appear when there is inflammation of the mastoid or the neighboring temporal bone in middle-ear trouble. In many cases this circumscribed localized pain and tenderness is very valuable in the localizing of abscesses.

Vomiting is important; early, present in majority of cases, especially cerebellar cases; mere change of position, from reclining to sitting, may bring on vomiting. Vertigo is of little value. The condition of the sensorium varies with the amount of intra-cranial pressure in the latent stage. There may be very little intra-cranial pressure for the reason that unlike brain tumor, abscesses do not compress the brain tissue, but liquefy, destroy and replace it, and therefore large abscesses in a quiescent stage, even to the size of a duck's egg in the frontal lobe, may produce no disturbance of intelligence or of consciousness. In the stage of activity, however, and just before rupture, we have the typical mental hebetude, somnolence, often delirium and hallucinations.

A slow pulse of 60 or less is always indicative of increased cerebral pressure, other causes being absent, but a rapid pulse in the acute stage is often present, and is not a contraindication to abscess. During any fever the pulse usually becomes somewhat more rapid, but in abscess there is often a decline of the pulse rate with increased somnolence during the evening rise of temperature, and this, if found, is a very valuable symptom. Optic neuritis is more frequent than in tumor, but not so well developed (as to degree). If optic neuritis is absent the abscess is either of very acute development or small in size; abscess of frontal lobe has most marked optic neuritis.

Focal symptoms help much to make the diagnosis if the abscess is present in the psycho-motor area, little if

present in the occipital, temporal or frontal lobes. Focal signs in abscess may come and go because of the varying size of the abscess and the disappearance, temporarily at least, of the surrounding softening. We may have large abscesses of the centrum semi-ovale without focal signs, for the pus at first separates the white fibers instead of destroying them, and if the gray matter is intact, a whole lobe, Bergman says the greater part of a hemisphere may be destroyed without the development of a focal sign. The closer, however, the abscess is to gray matter and the greater destruction of tissue the more focal signs are developed. As in brain tumor, we must distinguish between focal signs due to destruction and focal signs due to pressure from edematous infiltration. The latter may come and go; the former are permanent and localizing. As abscesses may be present in any part of the brain we may have any of the corresponding focal signs.

Traumatic abscesses of psycho-motor area are characterized by the rapidity with which monoplegia and hemiplegia follow the Jacksonian epilepsy, or if the abscess is deep-seated, the rapid, but not apoplectic development of a hemiplegia without hemianesthesia. The paralysis is rarely complete.

Abscesses of the frontal lobe, like tumors in this region, have no specially localizing signs; on left side when large we may have motor aphasia involvement of right facial, even of arm; the localizing can be done, however, by considering the causal factors.

The hearing center is of value only if opposite ear is involved externally and has not been the seat of previous inflammation. Hence, according to Barr, it is of no value in two-thirds of the cases because the purulent otitis is bilateral.

Sensory aphasia is present in abscess of the left tempero-sphenoidal lobe. It is very important to remember that in most cases the sensory aphasia is transitory and not permanent; this is due to the fact that the abscess is usually on the underside of the tempero-sphenoidal lobe, which lies above the roof of middle ear, and affects the speech center only by distal pressure. Even epidural abscesses can affect the speech center by pressure (second case).

Abscesses of the temporal lobe are differentiated with difficulty from tumors, because fever is so frequently absent. We must rely on the etiology. Bergman says that even with all our diagnostic aids we frequently make mistakes in temporal abscesses.

With the abscess in the lateral lobes we will usually miss marked cerebellar signs, unless the pressure of the abscess affects the vermiform lobe, when, as in MacEwen's case, we will have marked ataxia. Then the centers and branches of six of the basilar nerves may be affected, but not so often as in tumor. Vertigo may just as well be due to labyrinthine as to cerebellar trouble, and is therefore of little value. Vertigo, uncertain gait and retraction or stiffness of neck are fairly often associated in cerebellar abscess. We can see, therefore, that the diagnosis of cerebellar abscess has usually been made, after the mastoid had been opened. In 19 operated cases tabulated by Koch, 8 times the abscess was found by the finding of a sinus leading to the abscess during mastoid operations, 7 times by aspirating in all directions and finally finding the abscess in the cerebellum, and only 4 times was the diagnosis properly made before the operation by a consideration of signs and symptoms.

A chief factor of chronic latent abscesses is that they are subcortical, usually about one eighth to one-fourth of an inch beneath the surface. The discovery that the cortex of the brain could be punctured and cut into with almost no danger, is very recent. In compound comminuted fractures Ashley Cooper would not even remove the spiculæ of bone which had been driven into the brain. Dupuytren was the first to cut into the brain and empty an abscess, but his patient died, and for many years no surgeon ventured to repeat the daring operation. As a result of aspiration on the one hand and of increased knowledge of the physiology of the cortex on the other, surgeons no longer hesitate to make incisions into and puncture even deep into the brain substance. This procedure, however, is not without some danger. I have seen one death result after aspiration as a result of an injury to a vein of the choroid plexus with hemorrhage into the lateral ventricle.

CONCLUSION.

In conclusion let me introduce Oppenheim's résumé of his diagnostic experience. He says that in the majority of cases of suspected abscess he could rule out abscess at once without any trouble. In 35 cases he had serious difficulties of diagnosis. In 14 of the 35 cases he made the diagnosis of abscess. The other 21 cases were either localized meningitis, cerebrospinal meningitis, encephalitis median otitis and brain concussion.

Of the 14 abscesses, four belong to the period antedating the days of brain operations. In five cases an operation was deemed inadvisable, either because the abscess could not be located or because of complications. In five cases an operation was performed, in two of these the abscess was not found, although present. In the three remaining cases the operation was successful, but only one case recovered, the other two dying of the complicating meningitis. This experience of Oppenheim is the experience of all neurologists and explains the difference of opinion between us and the surgeon. The surgeon sees only the sifted and positive cases and feels that the diagnosis is easy and the results good; the neurologist sees all the doubtful and fatal cases and is not quite so sanguine.

THE DISEASED MIDDLE TURBINATE.*

CHARLES H. BAKER, M.D.
BAY CITY, MICH.

The undue importance which has been given the lower turbinate bodies in the search for the etiology of nasal disorders has overshadowed all other parts of the nasal cavities and led to wrongfully crediting the lower turbinals with the more important instead of the less important rôle in the production of nasal disease. This was principally owing to their easy accessibility and also to the fact that in most nasal disorders these bodies were found swollen and occluding the respiratory passages whereby effect was mistaken for cause.

A moment's reflection will convince one that an acute coryza manifests itself in the region above the lower turbinate first, with a feeling of dryness and pressure followed later by obstruction to respiration due to swelling of the lower turbinate. Very often a patient presents himself with a beginning coryza in which the only perceptible change of the mucous surface is a dryness and redness of the upper nasal chambers with some swelling of the tissue over the middle turbinate and little obstruction to breathing; but a few hours later having the lower passages tightly plugged by swollen tissue.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, C. R. Holmes and G. H. Makuen.

The anatomic relations of the middle turbinates are of the highest importance and can not too often be reviewed. The middle, sometimes called the ethmoid turbinate, is the extension of the ethmoid bone into the nasal chambers. This fact must be borne in mind for its important bearing on the etiology of disease in the middle turbinate, for suppurations in the ethmoid cells are often accompanied by a like condition in the turbinate, and vice versa.

Between the body of the middle turbinate and the nasal side wall are the openings of the frontal sinus, maxillary sinus, ethmoid cells, and at its posterior end is the opening of the sphenoid antrum. In a state of health the turbinate acts as a barrier, protecting the outlets of these various cavities from external irritants, but when inflammation occurs the resultant swelling produces occlusion of the outlets and retention of the secretions. The retained discharges ferment and in their turn become irritants, whence the above condition tends to be self-perpetuated.

The shape of the middle turbinate within physiologic limits varies greatly, depending on the type of nasal chambers in which it is found. In the high-roofed narrow chamber it may be merely a thin lamellar plate suspended by its upper border from the inward leaning side wall, and may be easily bent from side to side by the exploring probe. In the wide roomy chambers of the Germanic races it may assume the typical shape described in the text-books, while it may possess almost any variation from these and still retain, physiologically, perfect shape. By this I mean that when, itself not involved in inflammation, it does not press on any of the sensitive areas in its neighborhood or block the openings of the accessory sinuses it may be considered physiologic, however bizarre its shape.

The most common type of the middle turbinate is the one with knobbed anterior, which quite effectually shuts off from view the space lying above and behind. The space between the turbinate and septum varies from 1.5 to 3 mm., and between the turbinate and side wall usually a little less.

The opinion seems gaining ground that the meatuses serve merely as gutters to drain off nasal secretions and when pus is found in them it is produced in one or more of the accessory sinuses or cells. If time proves this to be correct it will greatly simplify our etiology if it does not make treatment any easier.

For the location of the point of origin of nasal pus a certain line of procedure is important. Inspection both anterior and posterior should precede cleansing or blowing the nose and masses of pus will often be seen lying in the lower and middle meatuses which are continued upward to their point of origin, or at least far on the road. After the patient blows his nose inspection is to be made again.

By way of parenthesis let me say that one-half the patients, especially children, need instruction in the proper way to blow the nose, most of them holding both nostrils tightly closed until the air is under pressure, then allowing it to partly escape by both nostrils at once and suddenly checking it; a method eminently calculated to precipitate Eustachian and middle-ear catarrh. The proper method is this: One nostril should be closed by pressure on the ala and the whole explosive air current directed through the open side. When this is properly done the masses of fluid pus will be expelled from the lower passages and inspection will often show the pus drawn out into a rope with one end issuing from the infected sinus infallibly pointing out the way.

Next, a cocain solution is applied with a probe to the lower turbinate and the anterior part of the middle one, sufficiently strong to induce some shrinking of the tissue. This opens the way frequently to discovery of hidden polypi, spurs, etc., which are not seen on first inspection.

Next, with a very thin and flexible probe, the tip surrounded by a thin pledget of cotton tightly wound and dipped in cocain, the regions about the middle turbinate are carefully explored and an estimate of the amount of space between septum and turbinate body, and the latter and side wall is obtained, together with the discovery of small polypi, localized hypertrophies, abnormalities of form and size of the turbinate and possibly denuded areas of bone.

The limited time at my disposal will permit an examination of two conditions only which are the results of suppuration, the one external and the other internal to the turbinate body, both of which may lead to increase in its bulk.

The first of these is nasal polypus, and my first proposition is this: Nasal polypus is a sign of existent or past suppuration in either the ethmoid cells or one of the accessory sinuses. Nasal polypus arises most frequently from the middle turbinate, next from the edges of the hiatus semilunaris around the outlets of the frontal and maxillary sinuses and anterior ethmoid cells, lastly from the posterior ethmoid and sphenoid antrum outlets. They are usually accompanied by suppuration, and I believe they never occur without antecedent suppuration of the ethmoid or the sinuses.

Pus issuing from these and flowing over the mucous membrane, eroded as happens during an acute coryza, excites the formation of true granulation tissue just the same as forms in the suppurating ear or around a healing mastoid and aided by gravity and an over-abundant serous secretion they go on to become polypus. I am aware this is not a generally accepted theory, but it has the merit of newness and plausibility, and in view of the fact that about all authorities acknowledge that the cause of nasal polypus is obscure or "in accord with some unknown law" it is as worthy of acceptance as any.

By far the larger number of cases of nasal polypus, particularly if multiple, will be found accompanied by suppuration, sometimes unseen until the polyps are removed, when an enormous amount of pus may be found to issue from some adjacent sinus. The removal of polypus should be considered as preliminary to more extensive operations in most cases, and should be undertaken only with the cold snare and strong illumination so as to be able, so far as may be, to see every step of the operation. Blind fishing with polypus forceps is a relic from the days of the moxa and seton, and no man is warranted in being guilty of their use.

After removal under cocain and adrenalin of all the polyps in sight, within a day or two it is often possible to find more which have come down from the spaces above, where they had been retained by the pressure of the lower ones, so that several sittings may be necessary to secure those which can be reached without interference with the bone. There is no assurance that when this is done all have been secured, for I have repeatedly removed the middle turbinate body and found from one to a dozen good-sized polyps concealed either behind, above or within the bone. Because of this experience I now make it a rule to remove the middle turbinate, either in whole or in part, when there is active disease of the turbinate, the adjacent sinuses or cells or

when asthma is not relieved permanently or when the polyps reform after removal.

The tendency of polyps to grow again after removal is well recognized, but this is more common with the mucous than the fibrous and the multiple than the single. This is due, not to an inherent disease or degeneration in the mucous membrane so much as it is to irritation from pus flowing over it externally or to purulent inflammation of the underlying bone.

No treatment of the stump is likely to prevent recurrence and is often worse than useless, increasing rather than checking growth. Nothing but removal of the cause will succeed, and to do this the middle turbinate requires amputation. This bone is the site of fully one-half the polyps formed and I believe much more than half, so that its removal gets rid of the basis of the larger part. Then the turbinate is usually greatly increased in size in these cases, adding its own bulk to the causes of obstruction. After polypus has existed for some time, even if from disease of other parts, this bone is found diseased and the pneumatic cells filled with pus or containing polyps.

I would therefore advocate removal of the middle turbinate in all cases of recurrent polypus of the middle turbinal itself; in all cases of recurrent polypus of the hiatus semilunaris; in all cases when removal of polypus opens and reveals collections of pus issuing from the sinuses, and in cases when by pressure the enlarged turbinate causes reflex nervous ailments, such as muscular asthenopia, persistent headache, chorea or epilepsy and especially asthma.

Nasal suppurations, post-nasal dropping, asthma, headache, disposition to frequent coryzas with slight cause; in short, continual nasal irritability is liable to remain so long as a single polypus is left, and if such symptoms persist after the healing following total removal of all which can be discovered, I contend it is the duty of the rhinologist to remove the middle turbinate, or enough of it to uncover the hiatus semilunaris and render easily accessible all portions of the nasal chambers lying above and behind the turbinate. So generally have I found polypus in surprising amounts after such removal in case of multiple polypi that I would now be surprised if I did not find them.

CASE 1.—A case in point is that of a physician, for years an acute sufferer from asthma, who under several eminent rhinologists had run the gamut of fashionable treatment, from galvano-cautery, that converted the nasal chamber into a beautiful dry scar, to trephine, which left only a hypertrophied scar stump on the site of the opposite inferior turbinate. As interlude he had had frequent removals of mucous polypus from either chamber. The right middle turbinate was hypertrophied and pressed on the septum, but no polyps could be detected on either side. To stop pressure the bone was removed and four large polyps were found in the hiatus semilunaris and above the bone posteriorly three additional were found within a week. The result of removing the stump of lower turbinate and straightening a deformed septum on the same side and removal of the middle turbinate of the opposite, with its concealed polyps, was nearly total relief of an asthma which had lasted for years and broken down an otherwise vigorous constitution.

Removal of the turbinate for several different conditions has brought to my notice a considerable number of cases which I think account for the bullous enlargement of the middle turbinate, which is such a fruitful source of nasal disorder. Bullous enlargement has been variously attributed to a periostitis and to a hyperplasia of the bony elements, but these cases point to a very different cause.

CASE 2.—A hay-fever patient had in childhood suffered from eczema and asthma, probably from adenoids, which disappeared before puberty, but his hay fever developed at about 30 years of age. There was at that time no enlargement of the middle turbinate and no asthma, but about six years ago asthma complicated the attacks coincident with commencing enlargement of the turbinate. The asthmatic seizures grew heavier as the bone grew thicker, and lasted later into the winter, until they were likely to be precipitated by any overexertion or error of diet. By this time the bone was pressing continuously on the sensitive septum. To relieve the irritation of this pressure the turbinate was amputated in October last and was found becoming bullous; stiff, inspissated pus occupied the greater part of the cell in the anterior portion. None of the adjoining ethmoid cells or sinuses gave any evidence of disease and healing was very prompt. The patient gained weight and strength very rapidly and passed the last winter in better health than for years. There was very moderate post-nasal discharge with a burning, smarting feeling above the palate, particularly on

Fig. 1.—Specimens (actual size) illustrating cases 1, 2 and 4. No. 2 is the first case—dried specimen; No. 1, three fragments of specimen from Case 2, also dry; No. 3 is from Case 4, with its adhering polyps P and P', the latter being on the upper posterior surface entirely concealed until the bone had been extracted.

awakening, and disposition to rasp the throat and an obscure feeling of constant pressure in the bone below the inner angle of the eye, but nothing else to indicate the presence of the pus. There has been no asthma since the operation, but the next hay-fever season will tell whether it is curative for the asthma.

CASE 3.—Another case was also an asthmatic without any definite clinical history, either as to origin of the attacks or symptoms aside from frequent severe paroxysms. The removal was done for relief of the pressure on the septum, which was very severe. The bulla, which was very much larger and the walls thinner than in the last case, was found completely filled with cheesy pus. As before, there was no involvement of the adjacent sinuses or cells and the healing was uneventful. There has been no asthma since the operation except an attack brought on by pressure from dry secretions imperfectly removed by the patient.

CASE 4.—The last case to which I call your attention shows an extreme development of this condition. The patient was a German farmer, who developed a paralysis of the external rectus of the left eye, for which no cause could be discovered outside the nasal chambers. His previous health had been perfect, there had been no specific disease or any unusual exposure or hardship, no headache, impairment of vision or any discernible cause until inspection of the nasal cavity showed a very much enlarged middle turbinate pressing both on the septum and the side wall, and a large nasal polypus dependent from its anterior end. The polypus was first removed and then the turbinate body, which was filled with thick and cheesy pus. Behind the turbinate was a small polypus which was impossible to discover until the bone had first been removed. No suppuration could be discovered in the adjacent cells or sinuses.

At the time of removal the various specimens of these conditions presented no evidence of inflammation within the cell, the pus being stiff and cheesy, and when the cavity was emptied the lining membrane had the pearly glistening appearance of those in which no pus was found. I therefore contend that bullous hypertrophy, the so-called pneumatic distention, is the result of continued suppuration within the middle turbinate, doubtless from infection of one of the normal pneumatic cells, and that the growing accumulation of

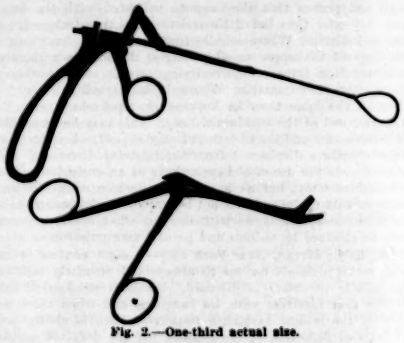


Fig. 2.—One-third actual size.

pus causes the obscure feeling of pressure of which patients with fairly open lower meatuses often complain.

Internal pressure fuses the existent pneumatic cells and gradually distends the bone, at the same time thinning the wall of the cell. The suppurative process in time dies out, the pus is absorbed and the cell is empty or it may contain one or more polypi which in no way differ in appearance or origin from the mucous polyp of the other parts of the nose.

In conclusion let me say, the removal of the middle turbinate is not always the easy operation it is when the bone is thin and dependent. Its base is often wide and the bone dense and a variety of instruments are required. Various modifications of Grünwald scissors and forceps and a good snare are necessary, and they must be mechanically correct or they will fail to work at a critical period.

I wish to call attention to a modified cutting forceps with angular blade which I have found useful, particularly in cleaning the ethmoid cells and edge of the hiatus semilunaris.

The snare, which is operated by a toggle joint, operates by pushing the canula over the loop instead of drawing the latter into the canula, which makes it easy to remove sessile growths and it is particularly suited to remove posterior hypertrophies of the turbinals, which are usually so exasperatingly elusive. This snare will cut the turbinals very easily, and as it threads the loop like the Sajous snare it is very quickly made ready and very economically of wire.

I have been asked if the removal of the middle turbinate does not unduly expose the sinus openings to external irritants in the inspired air currents. It does not, and for the very good reason that the bulk of the air current does not pass into the upper chamber, as we have been taught.

All experimenters, so far as I have been able to learn, who sought to determine the direction taken by the inspired air in its passage through the nose, have blown the air through the nostril to the pharynx instead of drawing it through, as is the method of Nature. The result has been identical with the act of pushing a string through a hole, namely, to bend it in all sorts of directions instead of pulling it through, in which case it goes straight. The only correct way would be to attach a suction apparatus to the posterior naris and draw the air through, in which case the course would be in the line of least resistance, which would be by way of the lower meatus.

DISCUSSION.

DR. O. T. FREER, Chicago—Where the nasal fossa is of a high, narrow construction or is contracted by reason of a moderate septal deflection I have found that there is at times not sufficient room for the manipulations with scissors or cutting forceps necessary for the removal of the middle turbinated body, unless force be used in applying the instruments. In these cases I have successfully employed a heart-shaped spokeshave with the blade attached to the shank at an angle of 45 degrees. The blade is passed back into the nasopharynx and applied to fit over the posterior extremity of the middle turbinated body. Then, with a strong, steady pull forward, while the shank of the instrument is crowded upward and uplifts the cartilaginous external nose, the middle turbinal is cut away. Where possible it is well to sever the anterior attachment of the middle turbinal with scissors as a preliminary, as scissors can usually be applied here, even though there may be no room to use them further back. Lifting the external nose makes it possible to bring the spokeshave forward in nearly a horizontal line. The method seems crude, but really does with one clean cut what is accomplished by many with scissors, cutting forceps and snare. Where there is room for the latter instruments their accuracy of application makes them preferable.

I think that Dr. Baker has exaggerated the influence of intranasal suppuration in producing nasal mucous polypi. I think that we have all seen cases in which, before and after removal of polypi, there was no evidence of suppuration, and I think that in the majority of instances there is no purulent discharge visible in the nose. I can recall two cases of cyst of the anterior end of the middle turbinal, neither of which showed proof that there had even been any suppuration, and I think that simple cyst of the middle turbinal is rather more common than the suppurating cyst.

DR. EDWIN PYNCHON, Chicago—There is no doubt that nasal occlusion in child life is one of the most frequent causes of the coryzas and catarrhs we so often meet in years later. Suitable attacks on the hypertrophied middle turbinal will give drainage to the attic of the nose. The course of respiration has been proved to be normally through the upper part of the nose, hence, as soon as the upper part of the nose is stopped, the normal respiration is interfered with, so we get our catarrhal manifestations. As regards blowing the nose, I have been in the habit of instructing patients to stoop over the washstand and blow simultaneously through both nostrils, preliminary to the cleansing of one nostril after the other. The enlargement of the middle turbinal and the pressure resulting therefrom is a common cause of headache.

Asthma and hay fever are particularly aggravated by attic occlusion from middle turbinal enlargement. There is one point that I have been rather surprised not to find mentioned in the literature, and that is the invariable association of middle turbinal hypertrophy with atrophy of the inferior turbinal. I have found the best results in atrophic rhinitis to follow vigorous attacks on the middle turbinal so as to improve the ventilation and drainage of the attic of the nose. One very important thing in operating is not to substitute one evil for another, therefore we do not want to produce a synechia which will also cause occlusion. Consequently, a method of operation should be selected whereby the wound will be limited to the middle turbinal and whereby the mucous membrane of the septum will not be injured. The objection to the punching forceps, often used, is that the mucous membrane of the septum may be injured and a synechia follow. I have designed a trephine, whereby I can remove a piece from the anterior end of the middle turbinal both painlessly and bloodlessly. This trephine is different from the ordinary trephines and is very much longer. It is probably six inches long, including the hand-piece collar, and the projecting guard is perhaps an inch and a half long and projects about one-quarter of an inch beyond the trephine, being thin and flat, so it can always be passed between the middle turbinal and the septum, and thus serves as a protector of the mucous membrane of the septum. As the trephine enters, the guard projecting beyond its point acts not only as a guide but also as a guard, preventing the injury of any part that it is not desired to touch. By a slight up and down motion the core is detached and the trephine removed, leaving a hole in the turbinal into which one blade of a pair of shears may be introduced while the other blade is placed in the meatus beneath and an incision is then easily made with the shears. This leaves a loose piece, somewhat resembling a polypus that is horizontal instead of vertical, about which a cold snare is introduced, so the entire piece is removed. I will say I have found that there is more resilience in a certain kind of wire that is sold as the E guitar string wire. In regard to the snare, I have found the Bucklin snare to be the most satisfactory. It is a modification of the Wright snare. I have not seen the forceps mentioned by the essayist, but it has occurred to me if the blade that cuts upward was only a fenestrated blade, as in Dr. Myles' forceps, it would be more useful. I recently ordered such a pair from Europe, but when the order returned the forceps were not included. I have since learned that such forceps have been designed by Dr. Roe of Rochester, but I have not yet been able to secure a pair.

DR. G. V. WOOLEN, Indianapolis—I have noticed of late a very strong tendency to deal with the affections of the nose and head with a view to suppuration and empyema. One time we ran in the direction of microbes, and then we ran in the direction of suppuration. I have not heard anything about pressure irritation. I wonder if we have forgotten the classical paper by Dr. Lefferts, written in the eighties, in which he called attention to pressure irritation and defective drainage. When we take into consideration the nasal nerve coming down over the turbinates and septum, the form of the attic of the nose and the middle turbinal, the first thing, it seems to me, that we ought to think of is pressure irritation. Anybody who has had an attack of pain from a corn or bunion can appreciate it.

DR. KATE W. BALDWIN, Philadelphia—I have had one case of severe hemorrhage seven days after a turbinectomy. At the time of the operation a number of polypi were thoroughly removed, leaving the space free. There was almost no hemorrhage at the time of the operation and not until the seventh day, when it occurred after some vigorous exercise. It was as alarming a hemorrhage as I have seen in nose and throat work. There was so little bleeding at the time of the operation that I did not pack. At the time of the hemorrhage I was obliged to do so. A large polypus had come down, and I am not sure whether or not it was the release of it that caused the hemorrhage.

DR. EMIL MAYER—What was the age of the patient? Was there any constitutional condition, hemorrhagic diathesis, that might account for it, or might there have been an arteriosclerosis?

DR. BALDWIN—The patient's condition was very poor, especially the mental condition. I think there were probably polypi in the sinuses, but I had no further opportunity to watch her. There was no hemorrhagic diathesis. The mental condition improved somewhat. The patient was 25 years of age.

DR. MAYER—The reason I asked the question was to determine if there was any arteriosclerosis, such as might be due to syphilis or something of that kind.

DR. ALLEN DEVILBISS, Toledo, Ohio—I wish to ask a question of Dr. Baker. I understood that he would hook his spokeshave over the growth and pass it through the mucous membrane and bone at one pull. Is that correct?

DR. BAKER—Yes, sir.

DR. DEVILBISS—I believe I have a good strong hand, but I can furnish some turbinates in which the Doctor would have to have a stronger arm than I have to do that. We could shave the soft tissues off in that manner, but it requires only a little resistance to stop a cutting edge against a hard surface. It is different if you can use a sliding motion, and it may be that the Doctor has some peculiar method of doing this.

DR. O. T. FREER, Chicago—I have resected both the inferior and middle turbinated bodies in this manner and have had no trouble in cutting through the bone in the cases that I have so far met. Ordinarily the turbinated bones are so frail and porous that they can be infracted with the finger and they offer thus but little resistance to the strong edge of the spokeshave. Where middle turbinectomy is done to give drainage of the upper nasal passages, the middle turbinated bone is often softened by rarifying osteitis, due to chronic suppurative inflammation. There is less trouble in cutting through the bone than in hooking the spokeshave over the posterior end of the turbinated body. This may be impossible of performance and the instrument may slip off, where tortuous nasal chambers displace it from the intended direction. I do not advocate the use of the spokeshave as an exclusive method for turbinectomy, but as a valuable resource where scissors, snare or cutting forceps can not be employed with satisfaction. In these cases it may do with one cut what otherwise could only be attained by tedious and painful manipulation.

DR. R. C. MYLES, New York City—I must confess it has been rather difficult for me to always tell definitely how far the middle turbinate is diseased. We have mechanical conditions that interfere with its functions and when those are relieved the middle turbinate recovers. That is chiefly true in cases of deflection of the septum. If the deflected septum is properly treated, the middle turbinate will return to its normal condition. Removal of the anterior half of the middle turbinal will relieve many cases of incipient empyema. Eight or ten years ago I described an instrument in the *Medical Record*, and from that time until now I have modified it, until I believe in all cases in which the septum is not deflected, and in many cases in which it is, it may be moved over sufficiently to introduce this instrument. Under cocain and adrenalin the turbinal may be quickly and satisfactorily removed. I was forcibly struck by the elongation of the uvula in cases of quinzy. It may become three or four times its normal length within a few days. This is because the quinzy interferes with the venous return of blood. I have found that elongated palates, more or less chronic, may shorten up when the blood is allowed to return through the venous channels. I believe much is due to the stasis of blood circulation. We find it in arteriosclerosis, and in syphilis and in polypi. When the antrum of Highmore is opened and free ventilation is secured one will find that polypi and edema will frequently disappear, because the pressure has been removed and the irritating material drained off.

DR. P. J. GIBBONS, Syracuse, N. Y.—In the removal of the middle turbinate, I have often found we can make a mere perforation, if necessary, and it will make a cracking sound as if you punctured the shell of an egg, and then you can use the instruments more readily. I have seen the anterior portion of the middle turbinate so dense that the electric

drill, revolving 2,200 to even 3,200 revolutions per minute, would not touch it." I would like to speak of the total removal of the middle turbinated bone. You should not remove it entirely except when you can not possibly help it. The posterior part, if possible, should be retained. If the turbinate presses on the septum, crush it, if necessary, as you do in craniotomy for the removal of a child. An article by me appeared in the *New York Medical Journal* of July 9, 1892, on the treatment of nasal stenosis by means of a new intranasal tube. I called it a new intranasal tube because Hippocrates and later Galen used intranasal tubes. Dr. Baker called attention to asthma. In one part of my article I say: "In the tube we possess a valuable device, and with it, in conjunction with medicinal and operative treatment, we can cure diseases that we were unable to cure in the past. This is true, especially in asthma and hay fever, which, I believe, can positively be cured by one or more of the drugs which we now possess, or by operative interference, or by using the tube, or it may be necessary to resort to two or even the three measures combined to cure some of the cases we meet."

I think the opening of the anterior part, either with the drill and the removal of part of it afterward, or by some other method, is better than the total removal of the middle turbinate. If you ever want to make a new instrument for nose and throat work and want to know whether there is any like it made, it has been said that all you need to do is to write to Dr. John Roe, and you will probably find that he has made the same thing a number of years before.

DR. W. S. ANDERSON, Detroit—I want to make a plea not to destroy more than is absolutely necessary in the removal of the turbinals. Only in a very few instances is it necessary to remove more than the anterior portion. It is possible, in many cases, to make an incision with a small knife through the mucous membrane, push it up, remove the anterior portion of the turbinal, drop down the flap of mucous membrane over it, and thus save the mucous membrane. There is too much of a tendency to unnecessarily destroy tissue. By being careful one can often save the mucous membrane, which is so often destroyed. The results, after the saving of the mucous membrane, are more satisfactory and prompt and the irritable scars are largely avoided.

DR. J. A. STUCKY, Lexington—I wish to protest against the crushing process for the removal of the turbinal. I have frequently found an osteitis following the use of this method. I would like to refer to the use of Dr. Holmes' little scissors. With them you can cut off an enlargement with a single cut while you would be adjusting a snare, and in this way take off two turbinates while adjusting the wire around one.

DR. GEORGE L. RICHARDS, Fall River, Mass.—I think an examination of the skulls here will show the portion necessary to be removed is the anterior portion, and if you use the spokeshave that is practically all you can remove. That is the operation I almost invariably do, only I do not do it with the spokeshave, for the removal of the anterior third is usually all that is necessary. Beside, I think a part of the middle turbinated is important in olfaction.

DR. B. A. RANDALL, Philadelphia—The essential basis of much of this work depends on the question of how we breathe and what is the respiratory tract of the nose. It is remarkable that such a matter should still be a matter of dispute. The failure definitely and finally to answer this seems to depend largely on the work of such men as Harrison Allen, who made very few mistakes, but who, because of study of comparative anatomy and the anatomy of the lower animals, was led to believe that we have an olfactory tract above and a respiratory tract below. Dr. Baker seems to take the same view. If you will take a few grains of magnesium powder and dust it in the air before the patient with normal, tidal breathing, and then find any of it, as drawn in and deposited on the mucous surfaces, below the level of the middle turbinate you will very much surprise me. The lower nasal meatus is not the respiratory but the drainage channel. You can, in this manner, very easily convince yourself that the upper olfactory tract is the respiratory tract of the nose. It is a pity that the matter is not clear in the minds of every one. Dr. Baker's admirable ecraseur observes the only proper indication in that the cannula moves forward over the snare. I mention this because others may have only the other kind of snare, such as the Jarvis, and will find that it will slip off if the loop is drawn. But it is perfectly feasible for us to push forward the cannula over the snare, when we use any of those snares, and avoid all slipping.

DR. C. R. HOLMES, Cincinnati—I have made a crude sketch here. Some of you have probably read my article on the removal of the turbinated bodies, particularly the inferior turbinated, and in that is pictured also the manner in which the scissors are introduced. And, by the way, I wish to state that they are usually not made correctly. Meyrowitz does make them right, but I have seen some not made correctly. If they are too long they will fracture. I have had Meyrowitz thicken the point a little and strengthen it so that they answer better. I have had occasion to see how a little lack of knowledge in the use of an instrument may cause the condemnation of the instrument. I let my first assistant remove a turbinate. He is an able man, who has been with me for three years. I noticed him having some difficulty, and finally he said: "Doctor, that is too hard; we can not cut it." I found he had taken the middle turbinate in the middle of its body. The object of the scissors is to get up near to the wall, and that is the reason they are made in this shape. A pair of scissors has been made by another gentleman, that work at right angles, but they do not seem to me so applicable. By taking hold of it with a pair of forceps, after using the scissors, or, if necessary, following the scissors with the snare, we can readily remove the turbinate. Many a man, however, does excellent work with a clumsy instrument, because he is familiar with it. I would say it is advisable to buy the smaller size of these scissors, because they usually are sufficient. Dr. Randall has called attention to the fact that the air does rise and go through the upper passages. The air passes along the upper passages of the nose, and if you have obstruction there you must remove it. At the time my paper was written I had made 1,500 turbinectomies, and I have made 2,000 since then, but they were not all middle turbinectomies by any means.

DR. EMIL MAYER—I would like Dr. Holmes to make it a little clearer that two instruments are used, a right and left, and that the instrument is suitable for the middle turbinated but not for the inferior turbinated.

DR. HOLMES—Yes, that is true. For the removal of the inferior turbinated I prefer an instrument made by Betz.

DR. G. HUDSON MAKUEN, Philadelphia—When you are standing, the air passes naturally upward, and it would have to go almost at a right angle to get through the inferior passage of the nose. I have accepted Dr. Reynolds' explanation without having tried the experiment, for it seems to me that is the natural course for the air to take.

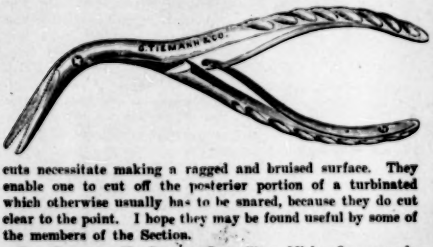
DR. HOLMES—Those who are interested in that subject will find that the experiment has been made. Cadavers were used and the inside of the nasal passages painted with iodin and powders of starch were used, with the cadavers in both the standing and sitting position.

DR. G. MCAULIFFE, New York City—The inspiratory currents experiment, etc., quoted by Dr. Randall were mentioned in a French magazine some 8 years ago. Since then I have been interested in studying the middle turbinate. It is surprising how often we will find collapsed inferior turbinates with troubled respiration due to the encroaching middle turbinate. We then find it is usually the turgescence of the mucous membrane which it is necessary to treat. By snipping off the mucous membrane of the anterior end of the middle turbinate, we can relieve the symptoms of impaired respiration. The statement of Dr. Randall that the powder is not found on the inferior turbinate will be explained by the fact that the air enters the nose in eddies. The eddies started up by the slow inspiration carry the powder to the roof. There is no doubt that some of the air passes across the surface of the inferior turbinate. The quick expiration goes more through the inferior meatus. All the treatments that have

done any good have been those in which the space of the middle meatus has been enlarged. By enlarging the space in the middle meatus we relieve the stagnation of secretion and the difficulty of inspiration that these patients complain of.

DR. J. C. BECK, Chicago—Two points I would like to make. In regard to the enlargement of the middle turbinate, nothing has been said about the effect of a large middle turbinated on the tear duct. After turbinectomy, you will find it stated that secondary hemorrhages, due to infection, may occur, where the proper cleansing of the nose is not attended to after operation. This is hemorrhage due to infection.

DR. IRA J. DUNN, Erie, Pa.—It seems to me appropriate to present these scissors, which I have found more satisfactory in nasal operating than any I have been able to find in the stock of the instrument makers. It was only after thorough search and failure to obtain scissors that would cut on the point strong enough to go through bone if necessary and still leave room for observation that these were devised. They only represent the best ideas of others. They are very strong, the blades are straight and compact, giving all possible room for observation. The hand is well out of the way of vision and situated so that, if necessary, a powerful grasp can be made. The edges are serrated, so that they do not slip back, but go cleanly through any tissue, cutting by one closure what is with difficulty accomplished by other scissors by a number of cuts. With more or less blood present, as is usual, several



cuts necessitate making a ragged and bruised surface. They enable one to cut off the posterior portion of a turbinated which otherwise usually has to be snared, because they do cut clear to the point. I hope they may be found useful by some of the members of the Section.

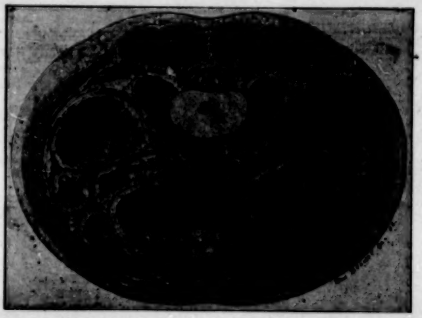
DR. CHARLES H. BAKER, Bay City, Mich.—I purposely omitted the method of removing the turbinal, because I described that at length in my paper, read last year, in which I credited Dr. Holmes' instruments. Dr. Holmes has said that the base is not always of a thin lamellar character, and sometimes the scissors may be used with difficulty. In those cases I have found the Gruenwald instruments and, particularly, the angular one which I have devised, very useful. I frequently find it advisable to remove the whole body of the turbinal. The polypi often occupy the posterior upper portion of the middle turbinal and you can not see them until you have removed the bone. That will explain the frequent failure to cure nasal polypi by persistent removal. I will acknowledge that I have sometimes secured the cure of polypi in this way. Failure is due to the polypi sometimes being out of sight, in the way I have described. Anatomically, the tear duct has no relation with the middle turbinate, since it opens behind the lower turbinate. As to synechia, they occur when you have not removed sufficient tissue or can not keep the patient under observation long enough to know that healing is complete before he passes out of your care. The trouble with the spokeshave is that you are trying to remove a curve by cutting on a straight line, and you often will not remove the entire body if you use the spokeshave.

Age Limit Fixed by Dentists.—In the November *Digest* we stated that factory inspectors in Illinois were enlisting the aid of dentists to tell by the teeth the age of children who seemed too young to work in factories. There is now a bill before the Illinois legislature providing that no factory owner shall employ a child who can not produce a certificate from a dentist showing that he is over 16 years of age.—*Dental Digest.*

TYPHOID FEVER WITH PERFORATION OF THE BOWEL AND RECOVERY.

T. K. HOLMES, M.D.
CHATHAM, ONTARIO.

Miss S., aged 30, of good family and personal history, was attacked with typhoid fever Oct. 6, 1900, and the disease pursued a mild and favorable course until October 26, when she was seized with agonizing pain in the abdomen accompanied by severe shock. I saw her half an hour later and found her temperature 96, pulse 150, skin cold and wet and altogether presenting the symptoms of perforation. The nurse had given a hypodermic injection of morphin ¼ grain, and strychnin 1/20 grain. Dr. J. H. Duncan saw the patient with me and we deemed it inexpedient to operate on account of her desperate condition. The strychnin and morphin were repeated at varying intervals to control the pain and sustain the heart, and normal salt solution was transfused beneath the skin every 12 hours, a quart being used each time. Tympanitis, which had been absent, soon became excessive, and vomiting was almost



Pelvic abscess due to perforation of a typhoid ulcer. A transverse section of the body just above the pelvic brim. Small portions of the bladder, uterus and of the left tube and ovary are seen, but the major portion of the pelvis is occupied by a large abscess. The intestinal loops are everywhere densely adherent to it and at the point indicated by the arrow is an opening between the loop of the small gut and the abscess. The omentum also was adherent to the surface of the abscess.

incessant for 24 hours. For ten days the patient was sustained entirely by rectal enemata. On the tenth day the bowels moved spontaneously, the bloating subsided and the stomach became tolerant of small quantities of peptonized milk.

Recovery after this occurred gradually, but when the bloating and tenderness had sufficiently subsided to permit examination a hard mass could be felt below and a little to the left of the navel, and could also be detected by pressing the finger through the vagina in the same locality. The mass was very hard and no fluctuation could be detected at any time. During the winter she gained slowly in strength, but her pulse never became normal and there was a slight rise of temperature toward evening.

In April, 1901, I consulted Dr. Cullen of Baltimore as to the propriety of operating on the patient, and asked him to perform the operation. This he did May 9, assisted by Dr. McKeough and myself. On vaginal examination a distinct mass could be felt occupying the pelvis, but not lying very low. On making an abdominal incision the intestinal loops were found adherent to the surface of this mass, which almost completely filled the pelvis. They were separated with considerable difficulty. In liberating one of these adhesions, evidently at the point of rupture, a perforation fully 2 cm. in diameter was found blending with the wall of the sac. This opening was closed with a continuous silk suture and reinforced by a second one. Further intestinal loops were freed, but it was impossible to remove the sac. The sac was punctured and about 700 c.c.

of most fetid yellowish white pus escaped. This had the characteristic fecal odor. The sac was scoured with gauze and a thick layer of granulation tissue removed from its walls. During this procedure the intestines were walled off carefully and after operation the intestinal fat was drawn up to and fastened to the upper part of the incision to prevent the intestines from dropping into the pelvis. A light iodoform pack was introduced around the sac and a loose drain placed in its interior.

The patient stood the operation well and in the evening the pulse was 116. The gauze packing was removed on the third day and the drain continued to be replaced daily until only a small sinus 3 inches deep remained. The hardness to be felt per vaginum did not completely disappear and much pain and tenderness remained at the left side of the cervix where the hardness was most marked.

A month after the operation this hardness had emptied itself into the sinus and a free discharge of pus was followed by freedom from pain and tenderness and fever. It was possible now to introduce a small glass irrigation tube through the sinus from the abdomen a distance of 5 inches downward and toward the left, and in this way the second abscess cavity was irrigated daily for several weeks, but drainage was so imperfect that I decided to make a counter opening into the vagina. I was thus enabled to pass a perforated rubber drainage tube from the abdominal surface through into the vagina and in this way to get better drainage and to irrigate the whole canal. By gradually withdrawing the tube the sinus finally closed and there was no further trouble. The patient has fully recovered her strength.

Special Article.

THE TYPHOID EPIDEMIC AT ITHACA.

(By Our Special Commissioner.)

I.

ITHACA, N. Y., March 10, 1903.

Ithaca is a town of about 13,000 inhabitants, with an additional student population of some 2,500. An excessive number of typhoid fever cases began to appear about Jan. 15, 1903, but it was not generally recognized that there was any unusual prevalence of the disease until Monday, January 26, when one of the local papers contained a statement that 73 residents of Ithaca were ill with "fever." During the week of January 26 to February 1 the epidemic progressed rapidly, and on February 2 it was stated that 237 cases of the fever existed in the city.

Up to the present date there have been about 91 cases among the resident students of Cornell University, and 12 of these have resulted fatally. There have been 8 additional deaths among Cornell students who had gone to their homes outside of the city; and it seems not unlikely that altogether 150 cases have thus far appeared among the student body. It is, at present, impossible to obtain exact information regarding the number of cases that has developed in the whole city. The number of deaths among the townspeople amounts to at least 24, and up to the present time more than 600 cases have probably occurred. The crest of the epidemic seems to have been reached in the latter part of February. Since the first of March the new cases reported have been relatively fewer in number and are of a much milder type.

The public water supply is distinctly responsible for the outbreak. Those portions of the town receiving any of the water from Six Mile creek have suffered most severely, while the houses on the University campus and in its immediate neighborhood, including Sage College, with its 200 women students, in all constituting a population of more than 500, have been practically exempt. The one exception is a student who is known to have taken water in the infected part of the city.

It has been known for years that the public water supply was impure and wholly unfit for drinking purposes, and the present epidemic is the outcome of conditions which were clearly understood and the significance of which was urged on the authorities many times.

During the last week a material improvement in the situation has been effected by the energetic action of Dr. Soper, representative of the New York State Board of Health. Measures designed to diminish the opportunities for secondary infection have been vigorously pushed under his direction, and it seems likely that the persistent application of rational methods will speedily relieve the local tension and restore complete confidence to the stricken town. So much infectious material, however, still exists in and about the community that rigorous precautions will have to be continued for a long time to prevent a recurrence of the same epidemic conditions.

Much enthusiasm has been manifested locally in a project for obtaining water for the entire city from artesian wells sunk in the valley, but it is stated by high engineering authority that an adequate and satisfactory supply is hardly likely to be obtained from this source. Measures for improving the character of the present supply by rigorous control of the water-shed or filtration are also being considered. The university authorities have already placed a contract for the installation of a small mechanical filter to supply the university campus. It is expected that the filter will be in operation within 35 days. The present university supply (from Fall Creek), as has been pointed out, is not involved in the present epidemic, but is nevertheless liable to sources of gross pollution. Good fortune rather than good management has been responsible for the immunity of the district served by the supply, since the conditions of the water-shed do not differ materially from those of the basin of Six Mile Creek.

(To be continued.)

Smallpox Vesicles.—A writer in the *Lancet*, referring to the prevalence of smallpox in London, and the difficulty sometimes in mild cases of differentiating between this disease and chickenpox, calls attention to a well-known method by which the object can be attained. The vesicles in chickenpox are unilocular, while in smallpox they are multilocular, the practical result of this pathologic fact being that, if a chickenpox vesicle be pricked with a needle, its contents can be completely evacuated, and the cell will collapse; whereas in smallpox, if you make twenty pricks with a needle, the vesicle will not collapse, because, being multilocular, it is impossible to empty it. —*Medical Times.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue :: :: Chicago, Ill.

Cable Address: "Medic, Chicago"

Subscription price: Five dollars per annum in advance

SATURDAY, MARCH 14, 1903.

FAMILY CARE OF THE INSANE.

In the proceedings of the Twenty-ninth National Conference of Charities which has just appeared, there is an article on a system for the care of the insane so little known to Americans as to merit attention. It is written by Julia C. Lathrop, for some years a member of the Illinois State Board of Charities, who has personally observed this system in Scotland, France and Belgium. Briefly stated, this system consists of family care for certain classes of quiet patients.

The village of Gheel in Belgium is the classic instance of such care. Here for more than a thousand years patients have been received into the homes of the villagers as boarders, and at the present time the boarding of 2000 patients is the main industry in the commune with its 6000 inhabitants. About twenty years ago a similar colony for quiet patients was opened by the government at Lierneux in southern Belgium. This has prospered and now contains between 400 and 500 patients. In 1892 the French government began the care of women patients in the village of Dun-sur-Auron and in 1900 they began at Ainay a like undertaking for men. These colonies were only opened after the French had studied what is known as the Berlin system as well as the Scotch and Belgium methods. By the Berlin system patients are sent out from the asylums, as Dalldorf, to board in neighboring families under the medical supervision of the asylum physicians, and it is chiefly valued as a halfway home for convalescents, while the French, Belgian and Scotch systems apply primarily to chronic patients and offer a method of permanent care.

In 1900 there were 654 women patients at Dun-sur-Auron and Ainay was just opened; in 1901 Ainay had 100 men. The patients have the greatest possible measure of liberty. If they desire, they do work of various kinds according to their former occupations; but it is expressly understood that their labor does not belong to the families in which they live and that they can dispose of their time as they like. A medical superintendent is in charge of each colony and effective supervision is easy because the patients are so concentrated. In Scotland, family care has a still different development. Instead of gathering patients into large village groups, they are carefully scattered so that there shall not be enough in any one place to give it a distinctive character. In 1901 there were 2793 patients in private dwellings in Scotland, while the total number of insane was 15,899. It is evident that family care is not suitable for all classes of patients, but the experience of Scotland and Belgium shows that in both of those countries about 20 per cent. of all the insane may be thus cared for.

The principal arguments in favor of the system are: 1. Humanitarian. The increased comfort and happiness of patients. A Scotch inspector says: "The freedom from irksome discipline and the social advantage of mixing with sane people of their own rank in life and on a footing of equality, has a wonderfully beneficial effect and has resulted in not a few cases of complete recovery." The Belgian and French authorities tell the same story. 2. Economy. The daily expenditure per capita in asylums of the Department of the Seine is 58 cents. At the village of Dun it is 28 cents. "In Scotland the current cost of boarding-out is about two-thirds that of hospital care," and this estimate does not take into consideration the enormous cost of hospital plants.

The most obvious objection to this system would be the danger of violence to the families, yet Drs. Peters and Duperon in Belgium, Marie and Lwollf in France, agree in stating that instances of violence are of phenomenally rare occurrence, while in Scotland it is authoritatively stated that "during the 43 years in which this system has been in operation there has been but one serious assault committed by a boarded-out patient"—a record of amiability scarcely to be equaled by a like body of sane boarders for the same period, were the truth known.

Miss Lathrop gives an instance of family care in Scotland and draws a contrast between it and the American system. In the course of a visit to one of the Scotch villages, she found a male patient sitting in the cottage of one of the neighbors tending a baby, and was told that this baby was the object of John's devoted care. "Not long after, I was visiting an American asylum of the usual baronial castle type and in a locked ward of rather violent patients an elderly woman was knitting a pair of socks. The attendant said she could live perfectly well outside 'if she only had some one to look after her a bit.' In the main building a few hundred feet distant, apparently, but really as remote as Europe, she had heard that there was a new baby in the family of one of the staff physicians, and sent a pair of socks of her own knitting to this child whom, probably, she would never see. She was far more expensively housed, clothed and fed than John; the great building in which she lived was set in the midst of a splendid park instead of a humble cottage garden, but as for me or any kin I would choose the lot of John."

THE LIMITATIONS OF THE CYTOTOXIC THEORY.

Just now the cytotoxin occupies the center plank of the stage of medical research. The antitoxin is ancient history, and even the hemolysin and the bacteriolysin are falling behind. There is probably no organ or tissue that is not now being injected in emulsionized form into the midst of the complacent goat, the sedate goose, the

rabbit or guinea-pig. We may look soon for a deluge of reports on cytotoxin work, and we should await them with interest, for present indications are that the results may be either very great or very small. It is the simplicity of method that undoubtedly accounts for the rapid and general invasion of the field. One simply takes some particular organ or tissue, preferably one not already studied, grinds it up with sand and aseptic precautions, extracts it with salt solution, and injects the product into the selected animal. After a number of such injections at intervals of a few days the injected animal is bled, the serum separated from the corpuscles and injected into an animal of the same species as those that have furnished the tissues; and then the last animal is studied, both alive and dead, for evidences of effects of the serum.

The earlier reports that have been published have not been harmonious, and it is hard to know what to expect; but because of the large number of workers we may reasonably anticipate that it will not be long before enough facts have been established to set the work on a firmer basis. That it is an enticing study there can be no doubt, and from the standpoint of science it should be worked out to the end. How much is to be expected in a practical way is another matter, and it may be well for the benefit of those who are not in a position to appreciate the exact situation to call attention to some of the obstacles that may prevent practical application, in order that too great expectations may not arise. The first is the fact that to a large extent results are being obtained with heterolysins rather than with autolysins. By this is meant, for example, that in experiments on neurotoxic serum a goose is immunized with nervous tissue from dogs, and that its serum is then injected into dogs to study its effects. It is evident that the conditions so established are not the same as with serum obtained from dogs treated with dogs' tissues. And even in the latter case there is still a gap before we reach ordinary conditions of human pathologic processes, in which the toxins, if produced at all, would arise within the body of the animal they affect. As might be expected, the general rule is that the more remote in nature the two kinds of animals are the more activity will the cytotoxic serum possess; therefore, experiments using animals of the same species have yielded little result. It is evident that as matters now stand we can not apply many of the results obtained with heterogeneous serums in explaining the genesis of pathologic processes, for these must, if due to cytotoxins produced by cell immunization, be due to cytotoxins produced within the body of the very animal that they attack. However, there is some hope in this direction, for a few studies of autocytolysis have indicated that it may occur; these have concerned particularly the kidneys.

The earliest work, in which destruction of such cells as ciliated epithelium was observed, suggested the possibility that an immune serum against cancer might be produced, and attempts have been made in this direction. Here one great obstacle lies in the difficulty of securing material with which to immunize the animals that are to furnish the serum. To treat a single case of cancer of the breast, for example, would require the amputation of many other cancers of the breast to secure material for immunization. Furthermore, when we come to consider cancers in sites where they are generally badly infected, as the stomach or uterus, we should undoubtedly find difficulty when we inject our animals. Another therapeutic possibility lies in the anticytotoxic serum, which is obtained by immunizing animals to the cytotoxic serum. Here again the application to human medicine is impossible, for where are we to find subjects which will produce our anticytotoxic serum, even if we were able to procure human material to immunize animals in the first place?

Our only object in making prominent these difficulties in the practical application of this particular line of work is to caution against the evident tendency of those who are not fully informed to draw unwarranted conclusions or predictions. There is probably no investigator who does not appreciate the situation fully. Undoubtedly there are possibilities that means may be found to evade the obstacles, and great advances result. But even were there no hope evident that any clinical use might come of all this work it is the right of science to expect the study to be pushed to completion, if for no other reason than that there are questions still unanswered. We have never the right to ask of science, *cui bona?*

A NURSES' STRIKE.

The trained nurses in a New York hospital recently struck and left the institution badly in confusion for a time. By aid from other hospitals the trouble was tided over without serious consequences, but the occurrence is an unfortunate one and does not tend to elevate the opinion of the profession as regards the strikers. The affair curiously paralleled certain labor union strikes. The alleged or apparent cause was the introduction among them of a non-diplomaed assistant who had not, or was not entitled to wear, the nurse's uniform, and it is alleged that when they left, the striking nurses or some one among them destroyed records, mixed up medicines, deranged glasses and bottles and concealed keys of instrument cases. The only thing apparently lacking was the picketing of the hospital and slugging, or perhaps hair pulling and scratching of their substitutes. Next to the physician's, the nurse's should be an altruistic profession, but these particular nurses seem to have had a very low ideal of their duties and status. It is to be hoped that the action of these nurses will not be imitated by others, but that, if the facts are as charged, they will be promptly condemned and repudiated by their associates.

SCIENCE AND REST.

An opportunity to escape from the turmoil of this commercial world is often eagerly sought by the phy-

sician no less than by others. With the omnipresent mail and telegraph pursuing him, he begins to find it hard to secure a place for quiet recreation. Unless he can take an ocean voyage, the busy physician sometimes solves the problem by stealing away into the wild woods, his location being known to but one trusty friend. An ocean voyage has been long considered an ideal of freedom from care. Here the brain-fagged worker could read no daily paper, hear of no startling crime or commercial unheaval, receive no urgent letter or telegram on business matters, and the days passed amid quiet but novel and interesting scenes. But the quiet of this scene is threatened. We are told that while on her voyage many miles from land a ship received news by wireless telegraphy, a newspaper was printed and laid by the breakfast plates of the passengers. So it may not be long ere the busy physician can take his ocean voyage, but yet not get away from his g. p's. Hawaii, once called "the paradise of the Pacific," and delightfully free from worry because all outside news was at least a week old, is now connected by cable and is no longer in "charming isolation and yet accessibility." Thus by the advance of science the world becomes smaller and smaller until there will be no place left whither weary man may escape for rest.

COMPELLING TEMPERANCE BY LAW.

The saying that "You can not make a man temperate by act of parliament" has evidently a British origin and there has certainly been no tendency heretofore in that dominion toward prohibitory laws. Notwithstanding this, it seems to be a fact that one of the most stringent anti-liquor laws has just gone into effect there, and the consequences will be worth watching. Instead of being prophylactic against drunkenness in the way of prohibition, it is directly punitive. Drunkenness itself is made an offense, whether the individual is disorderly or not, and repeated convictions make the offender, as it were, a habitual criminal subject to compulsory detention for a considerable period up to three years. The appearance before the court and conviction more than a certain number of times, moreover, puts the individual on a published blacklist, and the personal responsibility of dramsellers as regards those thus listed is to be stringently enforced. The working of the law will be watched by all who are interested in the reduction of the evils of intemperance. If inebriety is a disease, as some claim, the provisions of the law would appear to be harsh, unless, indeed, we assume that, though a disease, it does not diminish responsibility. Probably the British magistrates will accept this view if the disease theory is pleaded before them, and it would certainly be unreasonable to permit disease to be a license to commit offenses against good morals and public welfare. The London and Glasgow police will have their hands full if they construe the law with any strictness and the licensed dealers will have to walk in narrower paths than they have been accustomed to if they wish to keep out of trouble.

LIFE-SAVING INVENTIONS.

The prevention of loss of life has been the subject of a number of recent inventions and some of these appear to promise something of real value. Anything that will reduce the amount of suffering and loss of life incident to travel is in line with the physician's plan of labor. One of the measures proposed is the use of acetylene to prevent the sinking of ships. The inventor proposes the placing of packages of calcium carbid throughout the lower parts of the ship in connection with collapsed gas bags. On the entrance of water it will reach the carbid and generate acetylene gas, which will inflate the bags and keep the ship afloat. The inventor has not told us how he proposes to prevent the explosion of the gas, or its ignition. Some of us might prefer to go down than up, or to drown than burn. Turning to railroads, we find a telephonic connection proposed between different engines by means of a third-rail system. On the approach of one train to another a signal is given, the engineer may then stop and telephone and learn the conditions. A more noteworthy plan is a system holding the drive wheels of the locomotive by magnetism to the rails. It is urged that this will prevent all accidents in case brakes fail to work on hills, in case slippery rails prevent the stopping of trains and in many cases where trains would otherwise leave the track. But the most promising invention is one by which electric connection is established through the rails to the engine so as to control the throttle of the locomotive. Whenever a locomotive approaches too near to another, a short circuit is established which automatically shuts the throttle, applies the brakes and stops the train. This would seem to remove an element of human fallibility. If any of these pass beyond the experimental and theoretical stage, where so many inventions linger, they will be welcomed into the equipment of the railway systems.

JUSTIFIABLE SUMPTUARY LEGISLATION.

The protest against "sumptuary legislation" is the war cry of the man who considers it an inalienable right of the individual to eat and drink what he pleases. It is frequently raised and for selfish ends. A similar protest is that against legislation that seeks to have those who treat disease qualified to some extent. One of these protests was by Mark Twain, who urged that a man should not be limited in his choice of a physician. Since the legislation was to restrict incompetence it was equivalent to saying that a man should be allowed to die in any way he chooses. This would not be bad for a joke, but no joke was intended. A man is emphatically not privileged to die as he chooses, nor to eat and drink what he pleases. It is now recognized as a right of the community to forbid the sale of liquor to the habitual user of intoxicants, and the sale of cocain, of carbolic acid and of other drugs where proper use is not intended, and the sale of embalmed beef and of salicylic-acid-preserved food. No one disputes the right. The latest curtailment of alleged sumptuary rights is the action of the Board of Health of Ithaca, N. Y., the scene of the recent typhoid epidemic. It is made a misdemeanor, punishable by $50 fine or fifty days in jail, for anyone to drink unboiled city water or to furnish it to others for that purpose. Who will question their right to take this action? Two score homes bereaved, every available physician overworked, hospitals full, the work of a great university almost suspended, hundreds of lives threatened and the future health of

the locality in jeopardy from the pollution—the community has indeed the right to limit individual acts that add to these perils. The rights of man and the rights of men are coming more and more to be interpreted in the light of ultimate results and for the greatest good to the greatest number.

Medical News.

ALABAMA.

College To Be Renovated.—A bill has been introduced in the house appropriating $20,000 for the renovation of the building of the Medical College of Alabama, Mobile.

Smallpox Among Medical Students.—The health officials of Mobile have discovered eleven cases of smallpox among students of the Medical College of Alabama, Mobile.

Rhett Memorial.—The new operating room at the City Hospital, Huntsville, erected and equipped by the City Council in memory of the late Dr. R. Barnwell Rhett, Jr., was recently opened.

Personal.—Dr. T. Chilton Thorington, Montgomery, has been appointed captain and assistant surgeon, S. T. Ala., and assigned to the Second Infantry, vice Dr. Walter S. Britt, Eufaula, resigned.——Dr. Henry M. Hunter, Union Springs, has located in the City of Mexico.——Dr. William M. Faulk, who has been a member of the staff of Bryce Hospital for the Insane, has resigned, and will practice in Tuscaloosa.

GEORGIA.

The Cocain Question.—In a trial at Atlanta, March 3, the fact was elicited that at one drug store in that city more than 3000 prescriptions for cocain had been filled within two months.

Want Scholarships.—Applications are pouring in on the governor for appointment to scholarships in Augusta Medical College, under the law whereby the governor is authorized to name two persons from each of the eleven congressional districts of the state for free scholarships at this institution.

Society Victorious.—The Supreme Court has confirmed the decision of the lower court for the defendants in the case of E. S. E. Bryan versus the Atlanta Society of Medicine. Bryan brought action against the society for $10,000 damages on the ground that his name had been presented to the grand jury as an illegal practitioner of medicine.

Violation of Cocain Law.—Dr. O. H. Snider, Atlanta, arraigned on the charge of distributing free packages of cocain to negroes, was found guilty, February 25, and fined $500, a thirty days' sentence in the stockade, and bound over to the city court on a $1,000 bond. On his promise not again to offend, the fine was reduced to $100.——W. C. Moran, Atlanta, on March 3, was fined $100 and costs for dispensing cocain in a box which did not bear the red label required by law.

ILLINOIS.

To Repeal Law of 1901.—Representative Miller has introduced a bill to repeal the law of 1901 requiring reports of births and deaths and the recording of the same, and the registration of interments or other disposal of dead bodies.

Senate Bills.—A bill has recently been introduced in the senate giving the osteopaths representation on the State Board of Health; another abolishing the State Board of Health, and a third abolishing 56 of the 61 trustees of the state charitable institutions and vesting full control of these institutions, 16 in number, in a state commission of public charities.

Medical Practice Act.—On March 6 Representative Wheeler introduced the new medical practice act proposed by the Illinois State Medical Society. It creates a State Board of Medical Examiners, consisting of seven members, who shall be appointed by the governor with the advice and consent of the senate. The appointments are to be made from persons nominated by the state medical societies, and every incorporated society having an actual membership of not less than 100 licentiates in medicine and surgery and embracing membership from at least twenty counties may submit nominations. The term of office is to be seven years.

Smallpox.—During February 180 cases of smallpox were reported to the State Board of Health from 45 localities in 34 counties. In 1902 there were about 4,000 cases in the state in February, and the diminution is undoubtedly due to the persistent efforts of the State Board of Health to enforce vaccination. Difficulty is still found in handling the disease, because it is often not at first recognized as smallpox. Spread of the disease in many localities is due to the refusal of the local health authorities to accept the diagnosis of the attending physician. They call on the State Board of Health for an inspector before taking action, and many may be exposed before he comes.

Chicago.

Health Department Appropriations.—The Department of Health estimated its needs for 1903 at $188,000; the city comptroller made an estimate of $188,619, and the budget calls for $188,000.

New Hospital Site.—It is announced in the daily press that negotiations are in progress for the sale of the old West-Side baseball park, 560 by 640 feet, to Cook County, for $125,000, to be used as the site for a contagious-disease hospital.

Smallpox.—During the week ended March 7, 13 cases of smallpox were discovered; two patients died at their homes and 11 were removed to the isolation hospital. There are now nearly 60 patients at the hospital, and 20 deaths have occurred.

Physician Sued.—In the suit of Mrs. Parmelia J. Davis against Dr. Edwin H. Pratt for $3,000 damages on account of an operation alleged to have been illegally performed on her, by the defendant, without her or her husband's consent, the court gave judgment for the plaintiff for the full amount.

Fewer Deaths.—There were 118 fewer deaths reported during the week ended March 7, than during the previous week—a decrease of 16.5 per cent., says the Bulletin of the Health Department. The mortality rate is still excessive, however, when compared with that of 1902. The total deaths for the week numbered 595, as against 713 for the last week in February and 515 in the corresponding week of 1902.

Physicians Protest.—Physicians attached to the county agent's office protested, March 2, against the new method of paying for their services. They were formerly paid $50 a month. The new appropriation provides that they shall be paid $1.50 a call. The chairman of the finance committee said it was the intention to redistrict the city and to so systematize the work that long trips would be unnecessary.

INDIANA.

Osteopath Bill Defeated.—On March 4 the senate defeated Senator Johnston's bill, providing a separate board of examination and registration for the osteopaths of the state.

Suit Settled by Death.—The case of James M. Shelley against Dr. George W. Spohn, Elkhart, for $10,000 damages on account of alleged improper treatment of cancer, was abruptly terminated, March 9, by the death of the plaintiff.

Unclaimed Cadavers for Dissection.—The governor signed the bill giving unclaimed bodies to medical colleges for dissection on payment of expenses of shipment, on February 26. As this law repeals "all laws within the purview of this act," it includes the law under which resurrectionists were convicted, but it is believed that as the bill became a law after the indictments were returned, it will have no effect on these cases.

Disease in January.—Smallpox for the twenty-fourth consecutive month leads the list as the most prevalent disease, 921 cases, with 50 deaths, were reported. The increase in smallpox, as compared with the corresponding month last year is enormous, and was predicted by the State Board of Health. There was a 98 per cent. increase in number of cases, 80 per cent. increase in area covered, and 90 per cent. increase in the number of deaths. The order of prevalence of diseases was as follows: Smallpox, tonsillitis, bronchitis, pneumonia, rheumatism, influenza, typhoid fever, scarlet fever, pleuritis, diarrhea, intermittent fever, diphtheria and croup, erysipelas, whooping cough, measles, inflammation of bowels, puerperal fever, dysentery, cerebrospinal meningitis, cholera infantum, and cholera morbus.

January Deaths.—There were 2,910 deaths reported in January—a death rate of 13.6 per 1,000. The greatest number of deaths, 410, was caused by pneumonia, and the next, 302, by consumption. Typhoid fever caused 64 deaths, diphtheria 53, scarlet fever 23, whooping cough 19, cerebro-spinal meningitis 33, influenza 39, cancer 88, violence 129, and smallpox 50. The city death rate was 16.8, and the county death rate 11.9 per 1,000. Compared with January, 1902, there is an increase of .4 in the death rate for January, 1903. There is a decrease in the death rate from consumption of 16.4 in 100,000. There is also a decrease in typhoid fever, pneumonia, influenza, violence

and smallpox. There were only five deaths from smallpox in January, 1902, which compared with 50 in January, 1903, shows a very great increase.

LOUISIANA.

State Board of Health.—Dr. Edward Souchon, New Orleans, has been re-appointed president of the board, and Dr. Joseph S. Stephens, Natchitoches, and Percival B. McCutcheon, New Orleans, members.

Charity Hospital Report.—The annual report of the hospital shows revenues for the year of $134,799.14 and expenditures of $126,042.15, leaving a balance of $8,756.99. During the year the hospital received $34,895.21 from donations and legacies. There were 6,793 patients admitted during the year.

Near a Million for Tulane.—By the will of the late A. C. Hutchinson, the bulk of his estate is devised to Tulane University Medical Department. The estate is appraised at $991.169. The brother of the deceased has begun suit at New Orleans to break the will on the ground that the university is not competent to receive the bequest.

Personal.—Dr. Arthur W. D. Roaldes, New Orleans, has been made an officer of the Legion of Honor of France.——Dr. Jefferson D. Bloom has been re-elected house surgeon; Dr. James M. Batchelor, first assistant house surgeon; Dr. Joseph A. Danna, second assistant house surgeon; Dr. Oliver L. Pothier, pathologist, and Dr. Maurice J. B. Couret, assistant pathologist, of Charity Hospital, New Orleans.

MARYLAND.

The Shooting at Westport.—Dr. Houghton Boxley was fined $10 and costs for firing a pistol at Dr. John Floyd at Westport, a suburb of Baltimore, February 27. He claimed that he shot in self-defense. He was bound over to keep the peace for six months.

Deaths and Disease.—There were 202 deaths in Baltimore for the week ended March 7, an annual rate per 1,000 of 18.63. There were 37 deaths from pneumonia; 9 from bronchitis; 6 from la grippe, and 3 from measles and 2 from diphtheria. A few new cases of diphtheria and measles were reported, but the epidemic of the latter has almost subsided.

Dr. Flexner's "Bacteriolysin."—Dr. Flexner is engaged in manufacturing his dysentery antitoxin, or "bacteriolysin," as he terms it. Trial will be made of this antitoxin this summer at the Wilson sanitarium near Baltimore. In about 2 months Dr. Flexner will institute a course of instruction for about 30 young men at his laboratory in Philadelphia, on the identification of the dysentery bacillus, so that during the summer a very widespread study of the summer diarrheas of children in this country may be made. It is rumored that Dr. W. G. MacCollum, associate professor of pathology at the Johns Hopkins Medical School, may succeed Dr. Flexner at the University of Pennsylvania.

MASSACHUSETTS.

Foot and Mouth Disease.—Dr. A. J. Peters, chief of the cattle bureau, having discovered that a case of "foot and mouth disease" had been imported from New Hampshire, has arranged with the Boston and Maine R. R. that no more cattle, sheep or swine shall be brought into Massachusetts from that state over that system till the danger from the infection is over.

Personal.—Dr. W. R. Brinckerhoff, assistant pathologist of the Boston City Hospital, will soon go abroad for a year's study.——Two changes in the staff of the Massachusetts General Hospital are the resignation as visiting physician of Dr. William L. Richardson, and the appointment as visiting surgeon of Dr. Charles L. Scudder.

Faulkner Hospital Opened.—The Faulkner Hospital, Jamaica Plain, Boston, which has been built and fitted up at an expense of $100,000 by Dr. and Mrs. George Faulkner as a memorial to their daughter Mary, was opened for inspection February 25, and for the care of patients March 9. The hospital has 25 beds and is thoroughly equipped. Dr. Frank Balch and Henry Jackson are in charge, and are assisted by a staff made up from the physicians of that vicinity.

Bequests to Hospitals.—By the will of the late Jacob H. Hecht more than $50,000 is given to charities. Among the hospitals thus aided are the Massachusetts General Hospital, Boston Lying-in Hospital, St. Mary's Lying-in Hospital, Boston Emergency Hospital, and the Carney Hospital.——The Children's Hospital, the Perkins Institution for the Blind, the Eye and Ear Infirmary, the Carney Hospital, Massachusetts General Hospital, Boston City Hospital, School for Crippled and Deformed Children and the New England Peabody Home for Crippled Children are among the beneficiaries of the will of the late W. I. Bolton of Chelsea, Mass.

MISSOURI.

Moves into New Quarters.—The medical department of the Missouri University, Columbia, moved, February 24, into the new $40,000 building recently erected for it.

Influenza Raging.—It is reported that there are 15,000 cases of influenza in St. Louis. Nearly ten per cent of the 700 patients in the City Hospital are said to be suffering from the disease.

Hospital Saturday and Sunday.—The annual report of the Hospital Saturday and Sunday Association of St. Louis shows collections of $24,732.66, with expenses of $755.09. The association distributed $23,000 among the associated hospitals of the city.

College Commencements.—Central Medical College, St. Joseph held its graduating exercises, February 27. Dr. Thompson E. Potter delivered the faculty address, Dr. Edward T. Molzahn was valedictorian, and the diplomas were presented to a class of 24 by Dr. Moritz F. Weyman, president of the college. ——On February 28, a class of 14 received diplomas from Ensworth Medical College, St. Joseph. Dr. Wallace B. Deffenbaugh delivered the address on behalf of the faculty, and Dr. Thomas H. Doyle, president of the college, conferred the degrees.

New Bills.—By Mr. Baker, to establish a hospital in State Hospital for the Insane, No. 1 Fulton, for the detention and treatment of dipsomaniacs and inebriates and those addicted to excessive use of narcotics.——By Dr. Horace D. Quigg, Cooper County, providing for the appointment by the governor of three separate medical boards, one for each of the three schools of medicine, each board to consist of five members and they to examine applicants for their respective schools and issue licenses to those found qualified.——By Mr. Dorris of Oregon, to require the State Board of Health to issue certificates to practice medicine to all graduates of reputable medical colleges without examination.——By Mr. Brown, Ozark, to allow graduates from a four-year course medical college to practice medicine without examination, provided they apply for authority to practice within three months of their graduation.

NEW YORK.

Hospital for Crippled and Deformed.—The New York State Hospital for the Care of Crippled and Deformed Children, Tarrytown, has issued its report for the year ended Sept. 30, 1902. During this period 35 patients have been treated, of whom 10 have been discharged. About 150 applications for admission have been made during the year, but owing to the restricted accommodations the larger portion could not be accepted. If the hospital had been equipped with 5500 beds the surgeon-in-chief says he could have filled them in a month with deserving patients.

State Charities Aid Association.—The thirteenth annual report of this association shows that in the past year 1,158 children have been placed in families at an expense that is a mere trifle compared with that which would have been incurred if these children had been cared for in institutions. This, of course, takes no account of the good to the children and to the community resulting from family life for young children as compared with rearing in institutions. A committee of the association co-operates with the Department of Charities of New York City in caring for motherless infants. In this way 112 motherless babes were cared for in the past year, while in the past four years 127 such infants have been provided with permanent homes before reaching the age of two years. By the same means the mortality among foundlings has been reduced from over 95 per cent. to less than 11 per cent. The total number cared for since the beginning of this work in 1898 is 303.

Typhoid Legislation.—Senator Stewart of Ithaca with an interest in the public health quickened by the fact that his wife is ill with typhoid at his home, has introduced into the legislature a bill aiming at preventing the pollution of the waters of the state. The bill provides that permission will hereafter have to be obtained from the state commissioner of health for any person, shop, factory or industrial establishment to discharge sewage or other putrescible matter into the waters of the state after the same shall have been forbidden by any local board of health or other public authority. The penalty for the discharge of sewage from any public sewer system without a permit is $500, and $50 a day while the nuisance is maintained.

The penalty for discharging into any of the waters of the state any other matter prohibited by this bill is to be $25 and $5 a day for each day the offense is continued. At the request of Dr. Frederick Holme Wiggin, president of the New York State Medical Association, the committee on legislation of that body is actively to support this bill.

New York City.

Skene Avenue.—The suggestion is made that the name of the late Dr. Alexander J. C. Skene be perpetuated by the naming of some suitable avenue in Brooklyn.

Found Lectureship.—Dr. and Mrs. Christian A. Herter have given $25,000 to Johns Hopkins University, Baltimore, for the establishment of a lectureship in medicine.

Charges Unfounded.—The sensational charges recently made by an alcoholic patient in Bellevue Hospital against the nurses have been carefully investigated and, at the request of the district attorney, the case was dismissed because the charges were found to be without foundation.

Columbus Hospital.—This institution is to be enlarged shortly by the addition of new buildings, adjoining the present property, the ground for which has already been purchased. The erection of these new buildings will increase the capacity of the hospital from 98 to 150 beds. Funds for the erection of the buildings are available, which will be sufficient to provide for modern equipment of the new wards.

A Nurses' Strike.—Nine of the trained nurses of the New York Eye and Ear Infirmary left the hospital on the refusal of Dr. Richard H. Derby, the executive surgeon, to accede to their demand that the new head nurse and an objectionable assistant be removed. For a short time the service of the hospital was badly crippled by this high-handed action, but several nurses were sent from other institutions to render assistance in the emergency.

Suit for Death in Narcosis.—In the suit brought against Drs. John A. Wyeth and W. H. Landon White by Mrs. Alice Wood, as administratrix of the estate of her son, Robert Wood, deceased, for damages sustained by him by reason of alleged negligent treatment, the Appellate Division of the Supreme Court dismissed the case on its merits. The boy, who was being operated on by Dr. Wyeth for an infected wound of the arm, died under chloroform, and suit was thereon instituted. It will probably be carried to the appellate court.

Personal.—Dr. Frederick C. Keller has been appointed attending physician to Columbus Hospital, to succeed Dr. Farquhar Ferguson, who has been made consulting physician.——Dr. G. A. De Santos Saxe has been appointed assistant pathologist to Columbus Hospital.——Dr. George L. Peabody has resigned his position as professor of materia medica and therapeutics in the College of Physicians and Surgeons.——Dr. John Harrigan has been elected president of the staff of St. Mary's Hospital, Brooklyn, vice Dr. John J. Byrne, deceased.

Buffalo.

Personal.—Dr. Edward L. Frost has been appointed physician to the Erie County penitentiary, and Dr. Prescott Le Britien physician to the jail.——Dr. Marshall Clinton has been appointed attending surgeon at the Buffalo Hospital, Sisters of Charity.

Foreign Bodies in Stomach.—Dr. H. R. Gaylard recently made a gastrostomy on a patient at the Erie County Hospital, when the following articles, numbering 689 and weighing 2 pounds and 3 ounces, were removed from the stomach: One piece of chain 3 inches in length, 41 knife blades, 2 wire nails, 142 screws, 3 nuts, 452 sharp tacks, 48 shoemaker nails, 144 grammes of glass.

Typhoid Menace to Buffalo.—In an interview, Dr. Daniel Lewis, state commissioner of health, states that the condition of typhoid fever at West Seneca should greatly concern the people of Buffalo, for the reason that Buffalo has so many more people to be affected. The only remedy for Buffalo is to filter its water supply, and he is of the opinion that a filtering plant could be established for $750,000.

Marine-Hospital Site Selected.—Surgeon-General Wyman has reported to Representative Ryan in Washington the selection of about three acres of land on Main street, Buffalo, between the Providence Retreat and the Deaf and Dumb Institute, as a site for the new United States Marine-Hospital. The selection is based on the recommendations of Dr. L. L. Williams and Francis B. Wheaton, who were appointed a commission to act with Dr. Eugene Wasdin. It is one of the highest points of land in the city. There is stone three feet below the surface and excellent drainage.

OHIO.

Fire in Dayton.—A loss of about $1,500 was sustained by Dr. Dagobert A. Scheibenzuber, whose house was much damaged by fire, February 17.

Semi-Centenary in Practice.—On February 20, Dr. Bernhard Krause, Cleveland, celebrated the fiftieth anniversary of his graduation in medicine from the University of Göttingen, Germany.

Serious Accident.—Dr. Abijah J. Miles, Cincinnati, on February 27, while crossing a street, was struck by a street-car, causing a deep scalp wound in the back of the head and a compound fracture of the skull.

PENNSYLVANIA.

Concealed Smallpox.—The board of health of Chester will order the arrest of two hospital patients on the charge of their having concealed the fact that they had smallpox.

Must Not Use Name Without Permission.—The legislature has passed a law prohibiting the use of a person's name or picture as a testimonial for a patent medicine without the individual's consent.

Norristown Hospital Crowded.—The State Hospital for the Insane at Norristown is so over-crowded that 205 men and 192 women have to sleep on cots in the corridors. The inmates number 1,012 men and 1,097 women.

Diphtheria Unreported Quarantines Hospital.—Charity Hospital of Norristown, containing 32 patients and about a dozen nurses, has been placed under strict quarantine by the board of health, because a case of diphtheria which developed in the institution was not reported for several days.

Osteopathic Examiners.—The house of representatives recently gave a hearing to advocates of a bill to provide for an osteopathic board of examiners to grant license to practice ostopathy to those who have studied twenty months—five months in four different years—and have graduated from an osteopathic college.

Philadelphia.

Hospital Bequest.—Jefferson Medical College Hospital recently received a bequest of $5,000 from the estate of the late Thomas Elkinton.

Hospital Applies for Charter.—Frankford Hospital, occupying temporary quarters on Frankford avenue, has applied for a charter. As the nearest hospital is three miles distant, the new hospital will supply a need, especially for the treatment of emergency cases. The hospital now has accommodation for 40 patients.

Typhoid Not Abated.—As shown by the official report, the typhoid fever epidemic has not abated. For the week ended March 7 there were 254 new cases, as compared with 255 for the previous week. The general death-rate in the city is still high, there being 614 deaths, as compared with 508 for the corresponding week of last year.

Personal.—On March 3, Dr. A. Palmer Dudley, New York, operated in the gynecologic clinic of Jefferson Hospital. In the evening he gave an address to the members of the E. E. Montgomery Gynecological Society and their friends, and was afterward a guest of honor at the annual banquet of the society.——Dr. C. S. Ely has resigned as resident physician at Jefferson Hospital, having passed the examination for admission to the Navy.

Regulation of Barber Shops.—A meeting was recently called in Philadelphia by the International League of Barbers to further the passage of a bill by the Pennsylvania legislature providing sanitary regulation of barber shops. The proposed law provides for the licensing and registration of barbers, and requires their better education. It also provides for a board of examiners, of five members, who shall have been actually engaged in the business at least ten years. The movement is supported by the International Union of Journeymen Barbers.

Homeopaths Want Hospital.—In a recent message to the council, Mayor Ashbridge calls attention to the fact that for several years homeopathic physicians have been asking recognition on the medical boards of the Philadelphia Hospital; that since the enactment of an ordinance removing the Municipal Hospital from its present site, committees representing the homeopaths have several times waited on the mayor with petitions that, on removal of the institution, the present municipal hospital buildings and grounds be turned over to

them for a public homeopathic hospital for the treatment of non-contagious diseases. The message closes as follows:

In compliance with this request, I have the honor to lay the suggestion before your honorable bodies, and would ask that you have it referred to the appropriate committee. Inasmuch as a very large proportion of our citizens believe in the homeopathic method of treatment, I am of the opinion that the suggestion merits the very best consideration at your hands.

GENERAL.

Pension for Mrs. Walter Reed.—Congress has passed a bill appropriating $125 per month during her lifetime as a pension to Mrs. Emily Lawrence Reed, widow of the late Major Walter Reed, U. S. A.

Plague Spreads in Mexico.—A few cases of plague have appeared at points near Mazatlan, viz., El Oso, Villa Union and Lapaz. The outbreak seems to have been entirely subdued at El Oso by vigorous measures. The sanitary officials who burned plague-infected houses at Villa Union were mobbed. None was seriously hurt. Soldiers were sent there and precautions taken against the further spread of the disease.

The Diphtheria Antitoxin Question.—By invitation of Prof. Joseph P. Remington, chairman of the committee of revision of the United States Pharmacopeia, eight prominent physicians and bacteriologists recently met with him to consider the advisability of inserting diphtheria antitoxin in the Pharmacopeia. The state boards of health of New York, Pennsylvania and Massachusetts, the Army and Navy, and two prominent manufacturing firms were represented in the meeting. No definite decision is announced.

That Decreased Birth Rate.—Congress has passed a resolution recommending that state and municipal authorities cooperate with the Census Bureau in securing uniform and complete registration of births and deaths. It is said that the United States is behind European governments in this respect. Further statistics on the birth rate are appearing in the lay press, and some of these are quoted here, their accuracy not being guaranteed. The average annual rates of increase of the population, calculated by the excess of births over deaths, are as follows: Mothers of native birth and parentage, 19.5 per 1,000; foreign parentage, 36.5; colored, 17.8. In New England the native rate is 3.8 and the foreign 39.6. The census gives very meager information on the birth rate. About all the statistical summary possible is to deduct the number of deaths and the number of immigrants from the apparent increase of population. The total population of the United States in 1890 was 62,947,714, and the natural increase during the next ten years was 12,315,961. The average annual rate of excess of births for those ten years was 17.7 per 1,000 of population. The death rate was 16.3 per 1,000 in 1900 and about 8 per cent. per 1,000 in 1890, as given in the census reports of that year. Taking the mean of these, as representing the average annual death rate for the decade, there must have been an average annual birth rate of 35.1 per 1,000 to produce the increase of population. This rate is said to exceed the rates in some European countries. Their rates are given as follows: Hungary, 40.5; Austria, 37.2; Germany, 37.2; Italy, 35.5; England, 30.1; France, 22.2. Returning to the United States, a tabulated statement of the states is given. The lowest birth rate is among the native families of New England (3.8 per 1,000). In Connecticut it is the lowest of any state (1.8 per 1,000), while in Utah we find the highest percentage (63.1 per 1,000). The following table shows the excess of births over deaths per 1,000 of the population among native white parents:

Utah	63.1	Illinois	22.8
Idaho	48.3	Iowa	20.8
Wisconsin	41.2	Missouri	26.3
Minnesota	40.0	Nebraska	22.2
Texas	38.7	Kansas	21.6
North Dakota	35.5	Indiana	16.3
Louisiana	35.5	Michigan	19.3
West Virginia	33.9	Ohio	12.9
Arizona	36.8	Pennsylvania	14.0
Montana	32.2	New York	8.9

The following table shows the birth rate among the foreign-born population:

Utah	41.7	Illinois	43.9
Idaho	50.5	Iowa	31.0
Wisconsin	34.5	Missouri	17.1
Minnesota	53.4	Nebraska	43.7
Texas	53.2	Kansas	30.0
North Dakota	92.1	Indiana	19.4
Louisiana	11.2	Michigan	40.1
West Virginia	25.2	Ohio	21.9
Arizona	52.5	Pennsylvania	36.8
Montana	73.2	New York	36.6

There is an interesting table in the census reports showing that among the foreign population of the United States the fecundity of the different races of mothers during the ten years from 1890 to 1900 was in the following order: Bohemian, Russian, Hungarian, Italian, Scotch, Scandinavian, Canadian, English, German, French, Irish. The officials of the census office believe that the true birth rate of the country was probably much higher than 35.1 per 1,000. As near as they can calculate, it should be about 10 per cent. higher.

CANADA.

Dominion Board of Health Wanted.—Drs. Roddick and Lachapelle of Montreal and Dr. R. W. Powell of Ottawa had an interview last week with the premier with regard to the establishment of a Dominion board of health to take charge of all matters affecting public health.

Trinity Consolidation.—Arrangements are now being completed whereby Trinity Medical College will become the Medical Department of Trinity University. For some months a committee has been at work. It is understood that a very fine site has been secured adjoining the present medical college building, on which new and modern buildings, to cost perhaps $200,000, will be erected.

Richardson Testimonial.—It is the intention of the old students of Dr. J. H. Richardson, Toronto, to tender him a banquet in April, and to present him a portrait of himself in oil. Dr. Richardson, who was born in 1823, was appointed professor of anatomy in the University of Toronto in 1850. Three years ago he gave up active teaching and was appointed emeritus professor. He is still surgeon to the Toronto jail.

For Fifty Years a Medical Teacher.—This is the record of Dr. Uzziel Ogden of Toronto, who recently retired from the chair of gynecology in the University of Toronto. He may now be given the emeritus professorship. Dr. Ogden commenced practice in 1849 and commenced lecturing in medicine in 1853. He was the first editor of the *Canadian Practitioner and Review* when that journal was established in 1876 as the *Canadian Journal of Medical Science*.

McGill University Union's Building.—The graduates of McGill University have decided to mark the seventy-fifth anniversary of the commencement of lectures by the formation of a students' union and the erection of a building to be used by the union as a home. The anniversary will occur next year; and it has been decided that the building should cost $75,000 of which $10,000 has already been subscribed. This amount has been promised by two members of the McGill Graduates' Society, of New England. A canvass of the entire graduate body of McGill will be made to raise the balance. Dr. Craik, late dean of the medical faculty, was elected president.

Personal.—Dr. Gilbert Gordon, professor of hygiene in Trinity Medical College, Toronto, is recuperating at Old Point Comfort.——Dr. R. Barrington Nevitt, dean of the Woman's Medical College, Toronto, is paying a visit to his birthplace in Georgia.——Dr. Lapthorn Smith, Montreal, will read a paper at the International Medical Congress at Madrid.——Dr. C. F. Martin, associate professor of medicine in McGill University, has been delegated by the Canadian Medical Association and the American Pediatric Society to the International Medical Congress at Madrid.——Dr. W. H. Drummond of Montreal was given a reception by the Canadian Society of Philadelphia February 27.

FOREIGN.

The Thirty-second German Congress of Surgery will be held at Berlin, June 3 to 6, 1903.

The German Society of Orthopedic Surgery will hold its second annual congress at Berlin, June 2.

Chodin Endowment.—The pupils and colleagues of Professor Chodin of Kiev recently endowed two free beds in the Eye Hospital in his name on the occasion of the thirtieth anniversary of his connection with the university.

Projected Sanatoria for the Poor in Belgium.—It is proposed to found a stock company in Belgium for the erection of inexpensive sanatoria for lung diseases. The prices will be not over 40 to 60 cents a day. The capital is only $40,000, and aid is expected from the state.

Opening of Dispensary at Manila.—A free dispensary has been opened at Manila by a dozen American and Philippine physicians, Dr. Albert, president of the "Federal Party"; Dr. E. H. Winslow, surgeon to the constabulary, and Dr. H. W. Yemans, secretary; Drs. G. Ageo, P. H. Lyon, Lukban, Bautista, and others.

Charity Home for Physicians.—Dr. C. Rasch of Kropp bei Schleswig, Germany, is agitating the necessity of establishing

a home for physicians convalescing from diseases, and also for the superannuated, with, possibly, a view to including the members of physicians' families in its projected benefits. Our German exchanges endorse the necessity for such an institution "on account of the growing financial distress of our profession," and hope that the seed will fall on fruitful soil.

The Campaign Against Charlatans in Germany.—According to a regulation introduced last year, charlatans, before settling in a town, must report to the local medical authorities. The quacks now add to their advertisements: "Nature healer, duly reported to the local medical authority," *beim Kreisarzt Angemeldeter Heilkundiger*. This clause seems to express the official sanction of their practices, so that the regulation in question promotes quackery instead of combating it, as intended.

An American Professional Man's Club, composed in large part of physicians who are studying in Berlin, has been recently organized there, with headquarters at the Hotel Terminus. It is a source of much practical benefit to American physicians arriving in Berlin. Its objects are to promote social intercourse and the discussion of new and interesting professional matters and to afford information as to how and where to find the most practical professional work. Our correspondent says that this organization fills a long-felt want in Berlin, and that the club decided to notify the American medical profession through THE JOURNAL.

A Medical Woman of the Second Century.—Galen mentions a cataplasm "according to Antiochis," and Heraclides also refers to the same woman physician. An Austrian scientific exploring party found, in 1892, in the ruins of Tlos, a city in Asia Minor, the pedestal of a monument bearing the following inscription: "Antiochis, daughter of Diodotus of Tlos, honored by the senate and the people of Tlos for her experience in the medical art, has erected this statue to herself." No traces could be found of the statue. Baudouin establishes the identity of the person referred to in these three references, as a supplementary note to his work on "Woman in Medicine."

The Latest Charlatan Suit in Germany.—The charlatan Nardenkötter of Berlin, in a suit that has been dragging for two years, has been fined $750 and condemned to three years' imprisonment on the principal count, and to $150 fine and sixty days' imprisonment on another. The case was briefly mentioned in THE JOURNAL, Feb. 21, page 526. He had a regular physician in his employ, Dr. Kronheim, who signed the charlatan's prescriptions and received about $40 a month for his work in this line, to which he devoted an hour a day. He was condemned to six months' imprisonment and "loss of honor for one year,"—*zu einem Jahre Ehrverlust*. The charlatan diagnosed and prescribed by mail, and the suit revealed practices among the druggists who put up his prescriptions which have led to a suit against one of them. The drugs prescribed were heroic remedies in many cases, and most exorbitant prices were charged. The details of the case have been fully written up in the lay papers and must have enlightened part of the public, at least, in regard to the dangers of quackery, although our German exchanges express little hope of this possibility. The *Allg. Med. Ct. Ztg.* of February 21 gives the particulars of the suit.

LONDON LETTER.

Lead Poisoning from "Plumbo-Solvent" Drinking Water.

A valuable and elaborate report on this subject by Dr. Houston has just been issued by the medical department of the local government board. As long ago as 1885 the attention of the department was directed to a considerable number of cases of lead poisoning in Sheffield which were believed to be due to the drinking water. Investigation showed that the water was acid in reaction, especially at its origin in the peaty moorlands, where it collected in depressions. This acidity was found to be due to the life processes of bacteria contained in the moist peat. The present report shows that the property of "plumbo-solvency" is generally destroyed when the water possessing it is mingled with a large volume of neutral or acid-neutralizing water derived from other sources. In other instances filtration through sand or neutralization with lime or whiting may be adopted. But local authorities are warned of the need of bearing in mind the risks incidental to using plumbo-solvent water. It is declared undesirable to rely wholly on any system of neutralization. It should be first ascertained whether acid water can be altogether rejected from the supply, as by eliminating special peaty areas or by providing "leaping weirs" which insure that the first washings from the peat after a period of drought are automatically cast aside. The most satisfactory method of neutralization is sand filtration, with the addition of some neutralizing material to the filter and the subsequent addition of a trace of carbonate of soda to the neutral filtered water. But, whatever methods are adopted, they should be checked from time to time by suitable observations on the gathering areas, at the reservoirs and at the filters, as well as by examination of the water delivered to consumers.

Drunk or Dying?

The ever recurrent error of mistaking a serious injury or lesion of the brain for drunkenness has aroused the ire of London coroners and of the press against some of the great hospitals. Under the head of "A Grave Scandal" the *Hospital* insists on the necessity of providing a few emergency beds at each hospital, where this type of case could be kept under observation. Yet such are provided at only four out of the twelve great hospitals. A provincial coroner stopped the scandal of inquests coming before him of dying patients turned away from hospitals as drunk by declaring that in the next case he would commit the chairman of the committee and the superintendent of the hospital for manslaughter.

Non-Septic Puerperal Pyrexia.

At the Edinburgh Obstetrical Society Dr. Lamond Lackie read a very important paper on this subject. He pointed out that while most of the cases of fever in the puerperium are septic and in cases of doubt should be treated as such, yet septic organisms are not the only cause of fever. He related several cases. Dr. Lackie called attention to a very important practical point, which several of the cases illustrate: He has several times observed a rigor after administering an intrauterine douche, but always in cases in which the result showed that there was no retention of septic material. On the contrary, when the douche was needed the result was a fall of temperature.

Correspondence.

The Identity of Nerve Force and Electricity.

RICHMOND, Ind., March 7, 1903.

To the Editor:—My attention has been called to a paper read by Professor Loeb of the University of Chicago early in January, 1902. My reason for addressing you is this, viz.: to direct attention to work done, experiments made by myself, and conclusions reached, which will anticipate by priority his deductions and conclusions, as I understand them in his paper. I desire to mention my papers which have been read and published as early as 1873, 1875 and 1879, and papers since those dates which were published in the *Chicago Review* and are along the line recently indicated by Professor Loeb as "recent progress." I noticed the same, and desire to make my claim good, since 1873, in papers read and published. If, as he claims, the views are recent progress, I have anticipated him more than twenty years, as I was then teaching anatomy and physiology in the medical schools of Indianapolis. I only desire to mention the subject of each paper, as showing the subject and title.

First. My presidential address before the Indiana State Medical Society, May, 1873, subject "Vital Dynamics or What Is Force." 1. What Does It Represent? (Motion.) 2. What Are Its Relations and Correlations? 3. What are its Conservations?

Second. "Proofs of the Identity of Electrical Force and Nervous Force." A paper read at Indianapolis in 1879 before the Marion County Medical Society.

Third. Some papers on the relations of nervous force in the contraction and dilatation of blood vessels, also of heart dilatation and contraction, which were published in the *Chicago Medical Review*, copies of which are in my possession. (1884, September.)

A quotation is here made from this paper for the purpose of showing its basis: "The blood which is arterial, is the fluid which charges the battery, the brain, and hereby is generated force which is supplied to all tissues, and this charge, be it nervous or electrical, is a force which is universal in one form or another." The main question is, "What are the endowments and true relations of nervous tissue?" If we look at the re-

sults of mind and its power to impress other forces, we believe the evidence of our senses, and say that the directing forces in the entire universe were from mind, and this is the *primal* mind.

Now I have other papers which continue the thought of electricity and nervous force, and my last one is Jan. 1, 1902, with the title "Natural and Preternatural Law," in which are discussed "The Influence of Electricity and Mind in the Industrial and Economic Forces of the World."

These papers will establish my claim to priority on the questions at issue, and I desire now to only point to the proofs.

R. E. HAUGHTON, M.D.
Formerly Professor of Clinical and Operative Surgery in Central College of Physicians and Surgeons, Indianapolis.

Committee on Prophylaxis of Venereal Diseases.

NEW YORK, March 4, 1903.

To the Editor:—At the last (fifty-third) meeting of the American Medical Association, held at Saratoga Springs, June 10-13, 1902, a joint resolution from the Sections of Cutaneous Medicine and Surgery and Hygiene and Sanitary Science was introduced in the House of Delegates, as follows:

WHEREAS, There is a burning necessity to check the spread of venereal diseases, and, assuming that the States can not with impunity ignore the condition, it lies in the province of the medical profession to discuss and recommend to the respective state legislatures and municipalities means not regulamentative, but social, economic, educative and sanitary in their character, to diminish the danger from venereal diseases.

Resolved, That the Section on Cutaneous Medicine and Surgery of the American Medical Association invite the Section on Hygiene and Sanitary Science to co-operate with the Section on Cutaneous Medicine and Surgery in bringing about a propaganda in the different states, looking toward a proper recognition of the dangers from venereal diseases, and to arrange for a national meeting under the auspices of the American Medical Association for the prophylaxis of venereal diseases, similar to the International Conference for the Prophylaxis of Venereal Diseases, which meets again this year at Brussels, under the authority of the Belgian Government.

This was later submitted to the House of Delegates, which endorsed the action of the section and adopted the following:

Resolved, That a joint committee of six from the Sections on Hygiene and Sanitary Science and Cutaneous Medicine and Surgery be appointed by the President to stimulate study in and uniform knowledge of the subject of the prophylaxis of venereal diseases and to present to the American Medical Association a plan for a national meeting, similar to the International Conference for the Prophylaxis of Venereal Diseases, which meets again this year in Brussels, under the auspices of the Government of Belgium.

The Committee on Prophylaxis of Venereal Diseases consists of Drs. Henry D. Holton, chairman, Brattleboro, Vt.; Ludwig Weiss, secretary, 77 East 91st Street, New York; George M. Kober, 1600 T Street, Washington, D. C.; W. H. Sanders, Montgomery, Ala.; L. Duncan Bulkley, 531 Madison Avenue, New York City; and Frank H. Montgomery, 100 State Street, Chicago.

The peculiar social, racial and political conditions of our country are so different from those on the continent that they necessitate an expression of solely American ideas on this mooted question, both from a socio-economic and sanitary point of view. The committee desires the support of the medical profession and the aid and powerful collaboration of the medical press of the country to help them in this work. It takes the liberty of soliciting expressions and views editorially and otherwise, and would be glad of personal correspondence from those supporting the movement and who will contribute by papers, etc., to make it a success in case the House of Delegates should favor the holding of such a congress.

LUDWIG WEISS, M.D., Secretary of Committee.

The Chicago Water Supply.

CHICAGO, March 6, 1903.

To the Editor:—In the Bulletin of the health department for February, 1903, there is a comment on my paper "The Fly as a Carrier of Typhoid," published in THE JOURNAL, which seems to require an answer.

The Bulletin quotes my statement that the value of daily reports issued by the board of health as to the condition of the water "becomes somewhat problematical when one considers that twenty-four hours must always elapse between the collecting of the water and the published report, so that the people who read on Tuesday morning that the water at a certain station is bad and take precautions accordingly are a full day late, for they were drinking the bad water on Monday." It then proceeds to explain that the water samples are collected at the pumping stations between 8 and 9 o'clock each morning, and that the results of the analyses are given to the press before noon and appear in the afternoon papers of the same day, and that, as the pumping stations are several miles out, the water does not reach the city until several hours after the character has been announced.

I must explain the seeming inaccuracy of my statement by saying that it was based on a sentence in Dr. Reynolds' paper in the *Medical Recorder*, 1902, vol. 23. "By 'good' in the laboratory characterization is meant a water free from pathogenic organisms, the colon group." If, as would appear from this statement, the water is examined bacteriologically, eighteen hours at least would be required, but from the statement in the Bulletin it is evident that the examination is only chemical, not bacteriologic.

Even if it were true, however, that a chemical examination is sufficient, that would not alter my contention that the daily bulletins as to the state of the water are misleading. Water which changes its character with every change of wind and current and with every heavy rainfall is always dangerous. The sample examined on any particular morning represents a small portion of water for a very limited period of time. On Monday morning, for instance, the water "is good," on Tuesday morning "bad." At what time did the change take place? And is it not possible that on Monday morning also a part of the water was "bad," although not the particular portion taken for analysis?

The daily examination of the water may be valuable from the point of view of the statistician and the sanitary engineer, but the publication of the results as "warnings" to the people simply serves to lull them into a false security.

ALICE HAMILTON.

Silkworm Gut, Not Silk, for the Sustaining Sutures in Fixation of the Kidney.

NEW YORK, March 7, 1903.

To the Editor:—In THE JOURNAL of March 7, page 665, in the report of the proceedings of the New York County Medical Association it is incorrectly stated that I prefer silk for suturing the kidney. I employ temporary sutures of silkworm gut which are brought out through all the structures of the back and tied over a fold of gauze.

AUGUSTIN H. GOELET, M.D.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

MEDICAL PRACTICE IN TEXAS AND AFRICA.

AGRICULTURAL COLLEGE, MISS., March 5, 1903.

To the Editor:—Please let me know what the requirements are for the practice of medicine in Texas. W. H. B.

ANS.—Examination is required in Texas, but the certificates of twenty states, including Mississippi, are recognized by the state board in lieu of examination. A list of these states was given in this column last week.

NASHVILLE, TENN., February, 1903.

To the Editor:—Kindly inform me through your valuable columns of the requirements for practice in Orange River Colony and Transvaal, South Africa. G.

ANS.—We have no copy of the laws of the Transvaal under the new government and have not learned that a medical council has been organized. A proclamation was made last year requiring license from the secretary of the Transvaal administration, presentation of diploma and proper identification. The applicant must be legally qualified in his own country, which must grant equal privileges to qualified British subjects. We do not know if any changes have been made since.

MADSTONES.

DUNKIRK, IND., March 9, 1903.

To the Editor:—We have through the Ohio valley what are known as madstones. They are small stones, usually found among the collections of some relic-hunters and have a real or fabled history of having been a cure-all for poisoned wounds, snake-bites, dog-bites, etc. J. B. GARNER.

ANS.—There is no scientific evidence that they have any effect other than a moral one.

State Boards of Registration.

The New South Dakota Law.

A law just enacted in South Dakota regulating medical practice provides for a board of seven members appointed by the governor, not more than four from the regular school, two from the homeopathic and one from the eclectic. The board is to hold two regular meetings, beginning on the second Wednesday of July and the second Wednesday of January each year and such additional meetings and at such times and places as the board may deem advisable. Applicants must give satisfactory proof of being at least 21 years of age and of good moral character, and must pass an examination on the following subjects:

Anatomy, physiology, chemistry, pathology, therapeutics, practice of medicine, surgery, obstetrics, gynecology, diseases of the eye and ear, bacteriology, medical jurisprudence and such other branches as the board may deem advisable, and in addition thereto shall present evidence of having attended four full courses of lectures of at least twenty-six weeks each in a legally organized and reputable medical college recognized by the board of medical examiners, no two courses being in the same year and of having received a diploma from a legally organized and reputable medical college which shall be in good standing as shall be determined by the board, and said diploma shall be submitted to the board for inspection and verification; provided, that the four courses of lectures of six months each shall not apply to applicants who graduated prior to 1898.

The applicant, before being permitted to take the examination, shall pay the secretary of the board an examination fee of $20; the examination shall be written, oral or both, as the board may determine; the questions on all subjects except therapeutics and practice of medicine shall be such as may be answered alike by all schools of medicine. The applicant shall, if possible be examined in therapeutics and practice of medicine by those members of the board belonging to the same school as the applicant, and a license and certificate shall not be refused any applicant because of his adherence to any particular school of medicine. An average of at least 75 per cent. of correct answers is required. Any applicant who fails to pass the examination shall be eligible to a second examination at the next meeting of the board or at such time as the board may designate without an additional examination fee.

License can only be granted by the consent of not less than five members of the board and shall be signed by the president and secretary and attested by the seal of the board. All examination papers, together with the lists of questions answered shall be kept for reference and inspection for a period of not less than three years.

The law contains a reciprocity clause as follows:

The said board may, in its discretion, accept and license on the payment of the license fee and without examination of the applicant, any license which shall have been issued to him by the medical examining board of the District of Columbia, or any state or territory of the United States: provided, however, that the legal requirements of such examining board shall have been at the time of issuing such certificate or license in no degree or particular less than those of the state of South Dakota at the time when such certificate or license shall be presented for registration to the board created by this act; and provided, further, that the provisions of this section contained shall be held to apply only to such of said medical examining boards as accept and register the certificate or license granted by this board without examination by them, of the persons holding such certificates or license. Each applicant on making application under the provisions of this section shall pay to the secretary of the board a license fee of $20.

The board shall have the power and authority to revoke any license of any physician or surgeon heretofore or hereafter granted or issued, on complaint made to it on oath by one responsible person if it shall satisfactorily appear to the board: 1, that such physician or surgeon has been guilty of unprofessional, immoral or dishonorable conduct; or 2, that such physician or surgeon has been convicted of a felony; or 3, if such physician or surgeon publicly professes to cure or treat disease, injury or deformity in such a manner as to deceive the public; 4, if he shows gross unprofessional incompetency, provided that such license shall not be revoked except after a hearing before the board of medical examiners at which at least five members of such board shall be present and of which hearing the person holding the license to be revoked shall have had not less than ten days' written notice of the time and place of said hearing and only on due proof of the facts stated in the complaint.

The words unprofessional or dishonorable conduct as used in Sections 11 and 12 of this act are declared to mean:

1. Procuring or aiding or abetting a criminal abortion.
2. The employing of what is known as cappers or steerers.
3. The obtaining of any fee on the assurance that a manifestly incurable disease can be permanently cured.
4. Willfully betraying a professional secret.
5. All advertising of medical business in which untruthful or improbable statements are made or which are calculated to mislead or deceive the public.
6. All advertising of any medicine or any means whereby the monthly periods of women can be regulated or the menses re-established if suppressed.
7. Conviction of any offense involving moral turpitude.
8. Habitual intemperance.

Appeal to the Circuit Court can be made in case of revocation or refusal to grant certificate. Itinerant physicians are charged a license of $500 annually.

Licenses must be recorded in the office of the register of deeds in the county where the holder resides and practices. The register of deeds shall in July and January of each year furnish the secretary of the board of examiners a list of all licenses so recorded.

The definition of the practice of medicine is given in the following:

Section 21. When a person shall append or prefix the letters "M.R." or "M.D." or the title "Dr." or "Doctor," or any other sign or appellation in a medical sense to his or her name or shall profess publicly to be a physician or surgeon, or who shall recommend, prescribe or direct for the use of any person any drug, medicine, apparatus or other agency for the cure, relief or palliation of any ailment or disease of the mind or body, or for the cure or relief of any wound, fracture or bodily injury or deformity, after having received or with the intent of receiving therefor, either directly or indirectly any bonus, gift or compensation, shall be regarded as practicing within the meaning of this act.

This act shall not apply to the commissioned surgeons of the United States Army, Navy or Marine-Hospital Service in actual performance of their duties, nor to regularly licensed physicians or surgeons from outside this state in actual consultation with physicians of this state nor to dentists or osteopaths in the legitimate practice of their profession nor to christian scientists as such, who do not practice medicine, surgery or obstetrics by the use of any material remedies or agencies, nor to resident physicians and surgeons of this state regularly licensed and practicing in this state at the time of the taking effect of this act; provided, however, that the license heretofore or hereafter granted to any physician or surgeon may be revoked for the same reason and in the same manner as stated and provided in Sections 12 and 13 hereof.

Penalties are provided for impersonation or violation of the law, and it is made the duty of the state's attorney to prosecute. The law has an emergency clause which makes it in effect immediately on its passage.

Proposed New Jersey Law.

The State Board of Medical Examiners of New Jersey has introduced a bill into the legislature requiring applicants for a state license to submit certified evidence of an academic education embracing a certificate or diploma issued after four years of study either in a normal, manual training or high school of the first grade in that state, or in a legally constituted academy, seminary or institute of equal grade, or a student's certificate of examination for admission to the freshman class of a reputable literary college, or an academic education considered and accepted by the state superintendent of public instruction as fully equivalent.

The medical requirements are four full school years of at least nine months each, including four satisfactory courses of lectures of at least seven months each, in four different calendar years prior to graduation from a legally incorporated medical college in good standing.

Provision is also made for graduates in practice prior to 1894, by accepting ten years of continuous and reputable practice as the equivalent of two courses of medical lectures, and for graduates in practice prior to 1903, by accepting five years as the equivalent of one course of lectures, provided that such substitution or exemption be specified in the license.

Book Notices.

BIOGRAPHIC CLINICS. The Origin of the Ill Health of De Quincey, Carlyle, Darwin, Huxley and Browning. By George M. Gould, M.D., Editor of *American Medicine*. Cloth. Pp. 223. Price, $1.00. Philadelphia: P. Blakiston's Son & Co. 1903.

Whatever the accomplished editor of *American Medicine* may write is sure to be interesting. His writings have a positive, aggressive note about them that is refreshing and invigorating.

These characteristics and his versatility are well shown in this latest work, a study from the borderland between pure literature and medicine.

Dr. Gould takes five great Englishmen, De Quincey, Carlyle, Darwin, Huxley and Browning, each of whom it will be remembered was a great physical sufferer, and makes a critical study of the afflictions. All this suffering Gould believes was due to eye-strain. This is the object of the book, to prove that unrecognized and untreated refractive errors with consequent eye-strain drove De Quincey to opium, made Jane Welsh's husband an inconsiderate, ill-tempered dyspeptic tyrant, deprived Darwin of the power of long continuance at study of books or with the microscope, and caused Huxley and Browning to groan with the tortures of unexplained and almost constant headache. Numerous quotations are given from the letters of these men or of their contemporaries bearing on their health, striving to show that whenever the eyes were used for near work complaints appear of headache, nervousness, sleeplessness, biliousness, indigestion, etc. When reading and writing are dropped, especially when open-air work or recreation is indulged in, i. e., when little strain for near accommodation is demanded of the eyes, the complaints of ill health cease.

Whatever may be our views concerning eye-strain as a cause of headache and other disorders of health, and however prejudiced we may be at first as to the relation of refractive errors to the ill health of these five men in particular, we can not read this really fascinating book without feeling that the author has advanced a strong chain of circumstantial evidence in favor of his view. Nor can we avoid agreeing with him that in the light of our present day knowledge it seems disgraceful that no physician appears to have made even crude tests of vision and surprising that such scientific men as Darwin and Huxley apparently never once have suspected that there might be ocular defects to explain their suffering.

It seems to us that the author weakens his cause by his last chapters on the topic of eye-strain as the cause of various reflex phenomena. His views seem extreme. If we understand his statement—about the only one that is at all involved or the least obscure (p. 154)—he believes that "at least 90 per cent." of such symptoms as "headache, dyspepsia, 'biliousness,' sick-headache, migraine, neurasthenia, anemia, vertigo, insomnia, anorexia, constipation, eructation of gas, languor, ill-temper, melancholia, etc., are not caused by dietary indiscretion or organic disease, and of these, over 90 per cent. are reflex ocular neuroses, i. e., due to eye-strain." "Most eye-strain is due to astigmatism."

To the physician in general practice this will seem a broad and incredible statement. Granting that there is truth in Dr. Gould's statements that Nature cares for the delicate and all-important eye by making the rest of the body the vicarious sufferer, granting that the modern physician in his eager study of infectious diseases neglects the non-infectious and functional diseases and that he pays too little attention to "the reflex" and overlooks especially the reflex symptoms due to the eye, granting that glasses are not prescribed as often as they should be because of popular prejudice, or because "the eyes do not hurt," granting that many oculists are careless and unscientific, that opticians are worse and that the "muscle-cutters" are faddists, granting all this, yet who of wide experience in practical medicine can believe that the one great cause of 80 or 90 per cent. of headaches and a very large proportion [80 per cent.] of "digestional" or "nutritional" diseases is to be sought in eye-strain, and that these headaches and "digestional" disorders together are direct or secondary sources of a large part of the functional diseases and misery of the world (p. 205). But if the general practitioner can not believe this what shall be said of the specialists other than the oculist? Where does the stomach come in? Must our old notions as to errors in diet being a fruitful cause of dyspeptic symptoms go? Farmers furnish some of the worst cases of digestional disease. And what about our hyperchlorhydria and the train of secretory disturbances? Will glasses correct 80 per cent. of these cases, and have all our cures by diet been mistakes? And then the gynecologist, what must be his feelings as he sees the general practitioner after reading this book, steering the neurasthenic woman not to the office of the man who would cure her by stitching up a torn cervix, cutting a piece out of an ovary, breaking up adhesions, putting the displaced uterus where he thinks it ought to be, but across the hall to the oculist, who cures it all by glasses. And then the floating kidney reflex and Glénard's disease, and the hypertrophied turbinated bones and hemorrhoids, are they all delusions? And is there no such thing, then, as a true nerve-tire and brain-fatigue? Is this all due to the eye?

Surely our author has been extravagant in his statements or else we have misunderstood them. And we confess that his use of the word "functional" has been a little confusing to us at times. Astigmatism is not, we believe, the source of all these ills, nor is the wearing of glasses a panacea. Let the multitudes of those who have worn them, carefully fitted, for headache but with no help, bear witness. Let the thousands of sufferers from migraine, an excellent example of heredity, an influence at which our author rather casts slurs—testify who have tried glasses in vain.

The results of uncorrected astigmatism are undoubtedly often serious and should be attended to. This book does good in forcibly calling attention to this fact, and is, as we have said, a most interesting and delightful discussion of a borderland topic. But while admitting that the causal relation of eye-strain to the physical ills of these five men is made highly probable by the proof advanced, we can not accept the broad conclusions and extravagant statements that are scattered here and there throughout the book making the bulk of the medical profession little short of criminals in their supposed neglect of the eye as the cause of a large share of human suffering.

In spite of these criticisms, in spite of the overly-enthusiastic claims of the author, we heartily commend this book to every practitioner. Eye-strain is a cause of many troubles, there is no doubt of it, and every physician should be made to realize it.

A TEXT-BOOK OF MATERIA MEDICA, THERAPEUTICS, AND PHARMACOLOGY. By George F. Butler, Ph.G., M.D., Professor of Materia Medica and Therapeutics in the College of Physicians and Surgeons, Chicago, Medical Department of the University of Illinois, etc. Fourth Edition, Thoroughly Revised. Handsome Octavo Volume of 896 Pages, Illustrated. Cloth, $4.00 net. Philadelphia and London: W. B. Saunders & Co. 1902.

In this fourth edition within the last six years the author has added to his valuable treatise considerable new and important matter, and it seems to be brought up to date as well as carefully revised. Some changes have been made in his expressions of opinion in regard to certain drugs and some of the newer ones that have not yet obtained pharmacopeial rank are included. The book seems likely to keep the good reputation that it has held in the past as one of the best recent text-books on materia medica and therapeutics.

THE MATTISON METHOD IN MORPHINISM. A Modern and Humane Treatment of the Morphin Disease. By J. B. Matthews, M.D., Medical Director, Brooklyn Home for Narcotic Inebriates. Cloth. Pp. 40. Price, $1.00. Published by the Author. New York: H. B. Treat & Co. 1902.

This little volume gives the method and treatment of one who is certainly experienced in handling a difficult class of patients, the morphin habitués. The author's method is largely sedation with bromids supplemented by other measures, and the gradual discontinuance of the morphin habit, not so very long drawn out either, for the whole treatment does not seem to usually exceed four or five weeks at the outside. It seems to be a very satisfactory little monograph.

Deaths.

Charles F. Ulrich, M.D. University of Louisville, Ky., 1870, a member of the American Medical Association, surgeon of volunteers during the Civil War; some-time president of the Wheeling and Ohio County Medical Society and Medical Society of the State of West Virginia; vice-president of the American Congress of Tuberculosis and member of the American Academy of Medicine, died from paralysis at his home in Wheeling, W. Va., February 18, aged 75.

Franklin B. Galbraith, M.D. University of Michigan, Ann Arbor, 1861, a member of the American Medical Association, surgeon to the Fourth Michigan Volunteer Cavalry in the

Civil War, and thrice mayor of Pontiac, Mich., died at his home in that city, February 21, from angina pectoris, after an illness of only ten hours, aged 63. At a special meeting of the Pontiac Medical Society, February 23, resolutions of sorrow and sympathy were adopted.

Martin Rockwell Gage, M.D. Geneva (N. Y.) Medical College, 1852, who retired from practice in 1892, died from consumption at his home in Sparta, Wis., February 25, aged 78. He was a pioneer physician and surgeon of western Wisconsin, and served as surgeon of the Twenty-fifth Wisconsin Volunteer Infantry during the Civil War. He was a number of the Wisconsin State Medical Society and of the American Medical Association.

Willard I. H. Mathews, M.D. Iowa College of Physicians and Surgeons, 1886, county physician of Polk County, major and brigade surgeon U. S. V., in the Spanish-American War, for a time surgeon-in-charge of the U. S. General Hospital, Presidio, San Francisco, and for several months on duty in the Philippine Islands, died at his home in Des Moines, Iowa, February 24, from pneumonia, after an illness of four weeks, aged 38.

George E. McPherson, M.D. Jefferson Medical College, Philadelphia, 1855, died at his home in San Francisco, February 20, aged 73. He was a surgeon in the United States service in the Civil War, and then located in Chicago, but moved to California in 1872. In 1896 he fell from his carriage, fracturing his hip, and two years ago had another fall, from the effects of which he never recovered.

Lemuel G. Goode, M.D. New York University, 1887, died at his home in Jersey City, N. J., from pleuro-pneumonia, February 24, after an illness of four days. Dr. Goode was one of the first medical men to be the subject of operation under spinal anesthesia. In December, 1901, his leg was amputated, and during the operation he made notes of his sensations.

John Gerdine, M.D. Tulane University, New Orleans, 1861, a member of the American Medical Association; president Clark County Medical Society; ex-vice-president Georgia Medical Association, and one of the most prominent and beloved citizens of Athens, Ga., died at his home in that city, February 18, from pneumonia, after an illness of two days, aged 63.

James Calvin Hall, M.D. College of Physicians and Surgeons, Baltimore, 1879, died suddenly from heart disease, while attending a lecture in Millerstown, Pa., February 11, aged 48. At a meeting of the physicians of Perry, Juniata and Snyder counties, held February 16, memorial resolutions were adopted.

Pumphrey H. Hood, M.D. Jefferson Medical College, Philadelphia, 1851, for half a century a resident of Litchfield, Ill., died at his home in that place, February 20, aged 79. He was a surgeon in the United States service during the Civil War, and represented Montgomery County in the legislature in 1895.

Frank Brownlie Newton, M.D. University of Vermont, Burlington, 1899, died at his home in Stafford Springs, Conn., February 19, from pneumonia, after an illness of eleven days, aged 28. He was a member of the Connecticut Medical Society.

Richard Jordan Gatling, M.D. Medical College of Ohio, Cincinnati, for some time a practitioner of Indianapolis, but better known as the inventor of the Gatling gun, died suddenly in New York, February 26, from heart disease, aged 84.

George C. Gage, M.D. College of Physicians and Surgeons, New York, 1872, a specialist in diseases of the nose and throat, died at his home in New York City, February 22, three weeks after an operation for appendicitis, aged 52.

George White Sloan, M.D. Indiana Medical College, Indianapolis, president of the American Pharmaceutical Society, died at his home in Indianapolis, from apoplexy, February 15, after an illness of four months, aged 67.

Joseph A. Jackson, M.D. McGill University, Montreal, 1879, a member of the New Hampshire Medical Society, died at his home in Manchester, N. H., from la grippe, February 20, after an illness of two weeks, aged 68.

Henry McQuiston, M.D. Western Reserve University, Cleveland, 1868, died at his home in Pasadena, Cal., from consumption, February 13, after an illness of four years, aged 65.

Robert Hamilton Ramage, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1872, Carnegie, Pa., died at a hospital in Pittsburg, from consumption, February 15, aged 61.

George Young, M.D., retired, of Pioneer, Ohio, died at St. Mary's Hospital, Detroit, February 15, from injuries received four days previously in a street-car accident, aged 64.

William T. Riddlemoser, M.D. College of Physicians and Surgeons, Baltimore, 1884, died at his home in Smithsburg, Md., February 18, from tubercular meningitis, after an illness of several weeks, aged 43.

John B. Liddell, M.D. Atlanta (Ga.) Medical College, 1880, died from pneumonia, February 22, at his home in Gadsden, Ala., after an illness of three days.

Cyrenius D. Spencer, M.D. Berkshire Medical College, Pittsfield, Mass., 1849, died from apoplexy at his home in Binghamton, N. Y., February 22, aged 77.

Edward H. Luckett, M.D. Kentucky School of Medicine, Louisville, 1854, died at his home in Owensboro, Ky., February 24, from heart disease, aged 70.

James I. Scollard, M.D. Albany (N. Y.) Medical College, 1874, died suddenly in his office in Clinton, N. Y., February 20, from heart disease, aged 75.

Ruel M. Rogers, M.D. University of Missouri, St. Louis, 1854, died at his home in Pleasant Grove, Utah, February 6, from pneumonia, aged 70.

Robert M. Means, M.D. Jefferson Medical College, Philadelphia, 1893, died at his home in De Haven, Pa., February 14, from pneumonia, aged 35.

David H. West, M.D. Eclectic Medical Institute, Cincinnati, 1874, was found dead in bed at his home in Calvert, Texas, January 12.

Association News.

NEW ENGLAND RATES TO NEW ORLEANS.

The New England Passenger Association has authorized the rate of a fare and a third to the eastern gateways of the Trunk Line Association. The rate from these points to Washington or western termini (such as Cincinnati) is the usual reduced rate for regular season excursion and approximates a fare and a third. The rest of the way to New Orleans the rate is one fare for the round trip. All these rates and regulations will be given in the New Orleans number of THE JOURNAL, April 11.

THE NEW ORLEANS PROSPECT.

A Quotation from the Memphis Medical Monthly Concerning the Annual Meeting.

"All physicians who contemplate being present—and what Southern medical man will not attempt to get there?—will be looking forward to this occasion with keen anticipation, and will be planning that nothing shall interfere with their arrangements to be in New Orleans for at least the four days of the meeting.

"New Orleans is always a pleasant city to visit, and conditions for pleasure and profit will be exceedingly propitious at this time. The medical profession of New Orleans are going to do everything conceivable to render this meeting the largest and most enjoyable that the Association has ever held, and the arrangements that they have practically consummated for the accommodation and entertainment of visiting physicians are noteworthy for their completeness. The business and scientific sessions of the Association and its various sections will be interspersed with a number of entertainments which promise to be most delightful, and the visitor from the North will have every opportunity to judge of the quality of the vaunted Southern hospitality, while the Southerner will be completely overwhelmed by the prodigality of this hospitality as lavished in New Orleans."

INDIANA'S PROSPECTS FOR NEW ORLEANS.

An Extract from an Advance Copy of the Indiana Medical Journal for March.

"New Orleans presents notable features. To the ordinary tourist the yearly carnival and the French opera are signal attractions. There are other matters of local color: The French market, the great river explored by Lasalle and its picturesque levees, the French and Spanish creole quarters, and the gastronomic privileges which rival those of Baltimore—the paradise of good things to eat of all the world.

"The Crescent City is the second in exports and twelfth in population. The invention of the cotton gin by Whitney and the successful granulation of sugar by deBore one hundred years ago, gave a vast impetus to the state and city, which was further increased by the Louisiana purchase in 1803. Five miles below the city is the battlefield of Chalmette, where, Jan. 8, 1815, after the treaty of peace had been signed, Jackson repulsed the 5,000 British regulars fresh from the Napoleonic battlefields, with a disparity of losses not excelled in history.

"The city has a tropical climate; the great magnolia, the palm, the banana, the fig, the orange tree are in evidence. Between the lake and the river the atmosphere is moist and equalized in temperature, the lowest 27 F. and the highest 94. In May the city is in its greatest beauty, and the health conditions the best of the year. For a spring vacation for the physician and his family the time and place is ideal, and we make bold to say that not less than 200 members of the Indiana profession and their families will take advantage of this opportunity to visit or to revisit the city of carnivals, creoles, market baskets, tropical vegetation and quaint people."

Medical Organization.

The Duty of the Hour.

That the enthusiasm in favor of organization is growing rapidly must be evident to all who come in contact with medical men in every section of the country. Of course there are scoffers and doubting Thomases, but all respectable members of the profession are heartily tired of the antagonistic spirit which has so influenced our personal, professional and educational affairs in the past. This spirit has so lowered us in our own and in the public estimation that many had come to believe it inseparable from our calling, but the profession as a whole is ready to give reasonable trial to any plan which promises even a hope of relief.

How to take this widespread sentiment at the tide and crystalize it into a permanent reform is the problem and duty of the hour. This is being admirably done in a few states, and in many counties in other states, and should be at once undertaken by the officials and members of existing societies everywhere. The magnitude of the work will be understood when it is authoritatively stated that there are over 70,000 licensed practitioners in this country who are not members of any kind of society, county, district, state or national.

In an experience extending into many states, and where nearly every possible condition was to be met, it has been found that the physicians of nearly any county would promptly respond to a kind and plainly expressed invitation from any recognized outside authority to meet and organize. If the preliminary discussion was frank as to existing evils, to the difficulties of maintaining local societies, and the certain reward, scientific, social and material, which would follow success, such organizations were easily made permanent. Some counties in several states are already reporting every physician within their boundaries as already members of the county and state society and of the American Medical Association.

Such results as these have not come spontaneously or by accident, but from the patient, systematic and self-sacrificing labors of some zealous member of the Association. With similar effort they are possible in all but a few sparsely settled counties of the Union. Officers of state societies and members of the Association everywhere are earnestly requested to consider the possibilities to the profession from such missionary work, and to feel free to apply to the organization department for literature and any other assistance at its command.

Southwestern Minnesota District and County Medical Society.

At its meeting, January 29, in Worthington, the organization of this society was perfected in accordance with the rules of the American Medical Association. Dr. Emil King, Fulda, was elected president and Dr. Herbert D. Jencks, Pipestone, secretary.

Hardin County (Ky.) Medical Society.

At the regular meeting, held at Elizabethtown, March 5, Dr. C. Z. Aud was elected president; Dr. James W. O'Conner, vice-president, and Dr. James C. Mobley, secretary and treasurer. The society adopted the constitution and by-laws prepared by the committee on organization of the American Medical Association.

Monroe County (N. Y.) Medical Association.

The members of the Fourth District branch of the New York State Medical Association, residing in Monroe County, met in Rochester, February 27, and organized this association by the election of the following officers: President, Dr. Thomas A. O'Hare; vice-president, Dr. Edward Mott Moore, and secretary and treasurer, Dr. James C. Davis, all of Rochester.

Societies.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, FIFTY-FOURTH ANNUAL MEETING, NEW ORLEANS, MAY 5-8.

Medical Society of the Missouri Valley, Council Bluffs, Iowa, March 19-20.
Florida Medical Association, St. Augustine, April 8.
Western Ophthalmological and Oto-Laryngological Association, Indianapolis, April 9-11.
Tennessee State Medical Society, Nashville, April 14-16.
Medical Association of Georgia, Columbus, April 15.
South Carolina Medical Association, Sumter, April 15-16.
Iowa State Medical Society, Sioux City, April 15-17.
Medical Association of the State of Alabama, Talladega, April 21.
Medical Society of the State of California, Santa Barbara, April 21.
Mississippi State Medical Association, Greenville, April 21-23.
Medical Association of the State of Missouri, Excelsior Springs, April 21-23.
Texas State Medical Association, San Antonio, April 28.
Louisiana State Medical Society, New Orleans, April 28-30.
Medical and Chirurgical Faculty of Maryland, Baltimore, April 28-30.
Nebraska State Medical Society, Lincoln, April 28-30.
Illinois State Medical Society, Chicago, April 29-May 2.
Arkansas Medical Society, Jonesboro, April 30-May 2.

New York Academy of Medicine.—Dr. Lewis A. Conner has been elected chairman, and Dr. Ernest E. Smith, secretary, of the section on Medicine.

Redlands (Cal.) Medical Society.—At the annual meeting, January 21, Dr. Thomas M. Blythe was elected president; Dr. Christopher A. Sanborn, vice-president, and Dr. C. E. Ide, secretary and treasurer.

Red River Valley (Minn.) District and County Medical Society.—The first quarterly meeting was held at Crookston, January 27. Dr. Charles E. Dampier, Crookston, presided, and a banquet was tendered the society by Dr. George A. Morley.

St. Joseph (Mo.) Academy of Medicine.—Local physicians organized under this name, January 17, and elected Dr. James W. Heddens president; Dr. John B. Reynolds, vice-president, and Dr. William L. Kenney, secretary and treasurer.

Orange County (N. Y.) Medical Association.—The annual meeting was held in Middletown, January 21. Dr. Willis I. Purdy was elected president; Dr. William E. Douglas, vice-president, and Dr. Charles I. Redfield, secretary and treasurer, all of Middletown.

Rockland County (N. Y.) Medical Association.—At the annual meeting, held in Nyack, January 21, Dr. D. Burr Van Wagenen, Suffern, was elected president; Dr. George A. Leitner, Piermont, vice-president, and Dr. Norman B. Bayley, Haverstraw, secretary and treasurer.

Stark County (Ohio) Medical Society.—The annual meeting was held in Canton, January 17, when Dr. William C. Steele, New Berlin, was elected president; Dr. Frank W. Gavin, Canton, secretary and treasurer, and Dr. Frank E. Hart, Canton, corresponding secretary.

Quarter-Century Medical Club, Detroit.—The sixth annual banquet was held January 29. Dr. Henry A. Cleland was master of ceremonies; Drs. Justin E. Emerson and Albert E. Carrier were toastmasters, and Drs. Ernest L. Shurly, Leartus Connor and Justin E. Emerson were in charge of the arrangements.

Teller County District (Colo.) Medical Association.—The annual election, held recently, resulted as follows: Dr.

Marion A. Lattimer, Victor, president; Drs. William E. Driscoll, Goldfield, John A. Dunwoody, Cripple Creek, and J. S. Manley, Cripple Creek, vice-presidents; Dr. W. W. King, Cripple Creek, secretary, and Dr. John B. Polly, Elkton, treasurer.

Lavaca County Texas Medical Association.—The physicians of Lavaca County met, February 23, at Hallettsville, and organized a county association, electing the following officers: Dr. Walter Shropshire, Yoakum, president; Dr. James E. Lay, Hallettsville, vice-president; Dr. William E. Drisdale, Yoakum, secretary, and Dr. J. G. Guenther, Moulton, treasurer.

Richardson County (Neb.) Medical Society.—In accordance with the plan of the Nebraska State Medical Society, a county medical society was organized at Falls City, January 28, with the following officers: Dr. J. A. Waggener, Dawson, president; Dr. Anthony Keller, Falls City, vice-president, and Dr. Frank C. Wiser, Falls City, secretary and treasurer.

Southwestern Iowa Medical Association.—At the semi-annual meeting, held in Creston, February 19, the following officers were elected: President, Dr. J. E. Howe, Greenfield; vice-presidents, Drs. Charles H. DeWitt, Glenwood, and J. Frank Aldrich, Murray; secretary, Dr. Benjamin F. Gillmor, Creston, and treasurer, Dr. Joseph P. Claybaugh, Creston.

Hospital of the University of Pennsylvania Alumni Association.—On February 28 fifty former resident physicians of the hospital assembled at the University Club for their second annual banquet. Toasts were responded to by Drs. Barton Cooke Hirst, William E. Hughes, Charles H. Frazier, Edward Martin and John Carpenter. Dr. George E. de Schweinitz was elected president.

Ramsey County (Minn.) Medical Society.—At the annaul meeting in St. Paul, January 26, Dr. Angus MacDonald was elected president; Dr. H. Longstreet, vice-president; Dr. Ethelbert F. Geer, secretary; Dr. Frederick Leavitt, treasurer, and Dr. Alvah F. Whitman, necrologist. The constitution and by-laws were so amended as to permit any legal practitioner of non-sectarian medicine to become a member.

St. Clair County (Mich.) Medical Society.—The Port Huron Academy of Medicine changed its name to the St. Clair County Medical Society at its meeting, January 20, in order to become an integral part of the Michigan State Medical Society. Dr. Charles C. Clancy, Port Huron, was elected president; Dr. W. P. Derck, Marysville, vice-president, and Dr. A. Henri Cote, Port Huron, secretary and treasurer.

Sullivan County (N. H.) Medical and Surgical Society.—Physicians of Sullivan County met at Newport, January 28, and organized a county society to be in affiliation with the New Hampshire State Medical Society. Dr. Henry L. Stickney, Newport, was elected president; Dr. David P. Goodhue, West Springfield, vice-president; Dr. Fred P. Claggett, Newport, secretary, and Dr. Howard A. Hannaford, Grantham, treasurer.

Tuscola County (Mich.) Medical Society.—The physicians of the county met at Caro, January 19, and organized this society in conformity with the requirements of the American Medical Association and the Michigan State Medical Society. The following officers were elected: Dr. Arthur L. Seeley, Mayville, president; Dr. John E. Handy, Watrousville, vice-president; Dr. Wynee C. Garvin, Millington, secretary, and Dr. Frank D. La Valley, Vassar, treasurer.

Olmsted County (Minn.) Medical Society.—At the annual meeting, January 21, in Rochester, the following officers were elected: Dr. Arthur F. Kilbourne, Rochester, president; Drs. Charles L. Chapple, Rochester, and Charles E. Fawcett, Stewartville, vice-presidents, and Dr. Hugo Speier, Rochester, secretary and treasurer. The reorganization under the rules of the State Medical Society was voted, and a committee appointed to revise the constitution in conformity therewith.

Upper Mississippi Medical Association.—At a meeting in Brainerd, January 19, the physicians of that section of the state perfected an organization to be affiliated with the Minnesota State Medical Society, embracing the counties of Morrison, Crow Wing, Aitkin, Cass, Beltrami, Wadena and Hubbard. The following officers were elected: Dr. Walter Courtney, Brainerd, president; Dr. John J. McKinnon, Wadena, vice-president; Dr. John A. Thabes, Brainerd, secretary, and Dr. J. G. Millspaugh, Little Falls, treasurer.

Boston City Hospital Alumni Association.—The annual meeting was held recently. For the first time the associate members, who include past and present members of the visiting staff, were present. The club now numbers nearly 300. Ninety more were voted in at this meeting. The officers for the coming year are: President, Dr. Charles P. Bancroft, Concord, N. H.; vice-president, Dr. Chauncey C. Sheldon, Lynn, Mass.; secretary, Dr. William H. Robey, Jr., Boston, Mass., and treasurer, Dr. William H. Prescott, Boston, Mass.

Union Medical Association of Northeastern Ohio.—The one hundred and twenty-sixth quarterly meeting was held in Akron, February 10. The membership of the association is 140, distributed over the 15 northeastern counties of the state. The following officers were elected: President, Dr. Charles E. Norris, Akron; vice-presidents, Drs. Edward Lauder, Cleveland, and Frank C. Reed, Akron; secretary, Dr. John H. Seiler, Akron; corresponding secretary, Dr. Charles W. Milliken, Akron, and treasurer, Dr. Harold H. Jacobs, Akron.

THE PHYSICIANS' CLUB OF CHICAGO.

Regular Meeting, held Feb. 23, 1903.

Dr. Henry B. Favill in the Chair.

The general subject was "The Prevention of Tuberculosis."

The Reasons for a Special Effort to Prevent the Spread of Tuberculosis.

DR. WILLIAM A. EVANS was the first speaker, and gave the following reasons for prophylactic effort: First, the subject is worthy of consideration by this or any other body; second, there is no special reason for efforts at prevention unless there is some hope that that effort can be made successful; third, there is reason for special effort, in view of the fact that it will not prove unavailing.

Discussing the first of these reasons, he said that tuberculosis still remains the chief source of death, and the subject of prime consideration. In the ten principal cities of this country tuberculosis is responsible for 18,763 deaths, or 10.8 per cent. of the total death rate each year. Compared with other infectious diseases, which receive greater attention in the matter of prevention than tuberculosis, the relation in Chicago to diphtheria is 4 to 1; scarlet fever, 7 to 1; typhoid fever, 7 to 1. Kohler's statistics show that between the ages of 15 and 60, one-third of the people die from tuberculosis. According to Biggs and Prudden, there are in the City of New York at any given moment twenty thousand people who are rendered unproductive by reason of this disease.

Can tuberculosis be cured? According to the statistics compiled by Dr. Appel, U. S. A., in charge of Ford Bayard Sanitarium, 7.4 per cent. of cases are clinically cured, 11.6 convalescent, 34.9 improved, 25.2 unimproved, and 20.9 per cent. die. Dr. Evans quoted the statistics of other writers.

The question of prevention of tuberculosis resolves itself into hygiene, general hygiene and ventilation. Prevention must be effected, not only by the medical profession, but by the laity, who are most directly concerned and largely responsible for the spread of this disease. Laws are the result of public action; public action is slower than public conscience, and public conscience lags far behind public intelligence.

In What Way Can the General Practitioner Assist in the Purposes of the Crusade?

DR. N. S. DAVIS, JR., said that the position of the general practitioner in this movement is educative, but his influence should not be limited to educating patients only. It is essential to educate those who must be associated with them. Patients should live in light rooms, where there is good ventilation, and where the surroundings are clean and hygienic.

There is also a need for places where patients can be educated to care for themselves; where they can be taught by object lessons, seeing others who have improved under proper hygienic surroundings. To-day there is scarcely a hospital in Chicago which is willing to take these cases, because they are not prepared for them.

There is another advantage to be gained by admitting tuberculous patients to general hospitals. Every trained nurse should have experience in the care of cases of pulmonary tuberculosis.

The Committee on the Prevention of Tuberculosis of the Visiting Nurses' Association, Chicago.

DR. ARNOLD C. KLEBS read a paper with this title. The outline of the work as approved by the committee is as follows:

In general, considering the fact that the family members of a consumptive and those living in unhealthy conditions are the ones most threatened by the disease, education on the subject and eventually proper material aid have to be furnished to them primarily. The distribution of instructive pamphlets alone usually proves insufficient. It is, therefore, necessary to enhance the value of such printed instructions by personal interviews and repeated visits. For this purpose the co-operation of specially trained physicians and nurses, with the assistance of charity organizations, is deemed of importance. To facilitate such co-operation and to insure the uniformity of the measures to be employed, it is planned to establish a central office. From this office the general work is to be directed and carried out in district offices in the different parts of the city.

The work in the central office (1) is to be done by an executive committee of six, to be elected from (2) the general committee of forty, of which twelve are to be physicians. (3) A special tuberculosis fund may be established, if necessary. (4) Work to be done in the central office.

1. To collect and file all information. To ascertain the causes for the greater prevalence of the disease in certain districts. To examine the conditions of life in those districts, especially the condition of dwellings. To start a collection of literature on tuberculosis, especially in its socio-economic aspect. To maintain correspondence with other organizations.
2. To prepare instructive reading matter for distribution among (1) the public, (2) nurses, and (3) physicians.
3. To make arrangements for public lectures.
4. To co-operate with health authorities.
5. To disinfect houses.
6. To procure information about healthful occupations, eventually furnishing positions.
7. To decide on the advisability of transferring persons to other climates, eventually providing them with positions abroad.
8. To plan, found and eventually maintain health farms.
9. To advance the introduction of modern methods in existing institutions.
10. To test new ideas which promise results.
11. To supply the needy with food, medicines, disinfectants, spit cups, etc.
12. To extend aid to all efforts at organization.
13. To examine all cases applying for help and treatment.
14. To found district offices, each to have physicians and nurses in charge.

The essayist stated that as long as sanatoria can not be had, sanatorium methods must be used in the houses of the consumptives. To make the movement successful, every physician and layman ought to learn about it and help it in every possible way.

Discussion.

DR. ROBERT H. BABCOCK said that whenever tuberculosis has been diminished, it has been through the intelligent efforts of the medical profession. The first step in this educational movement should be the education of the medical profession. Many physicians are entirely oblivious to the necessity of preserving proper hygienic measures.

DR. WALTER M. FITCH called attention to the fact that a well-developed active chest is not so susceptible to infection, and much can be done to overcome this susceptibility to the disease.

DR. GEORGE W. WEBSTER emphasized the importance of institutional treatment; each patient, when he returns home, becomes an educated center, from which accurate information is disseminated. In the schools and universities more time should be devoted to the teaching of public hygiene, and less time to music and other studies of less value. Dr. Webster offered the following resolution, which was adopted:

Resolved, That it is the sense of the Physicians' Club that its members heartily approve and endorse the plan proposed by Dr. Klebs for preventing the spread of pulmonary tuberculosis.

DR. L. HARRISON METTLER suggested that properly guarded articles be given to the public press. The public can be reached better through the daily paper than through any other medium.

DR. A. M. CORWIN referred to the poor architecture, from the standpoint of hygiene, of the modern building, saying that the atmosphere in most of them is foul, because of insufficient ventilation and poor lighting facilities.

DR. ARNOLD C. KLEBS believes that the public would resent any intrusion by public officers in a disease which affects the victims rather slightly. He thinks a private movement would be more successful than one instituted by legislation. The poor people appeal for physicians, for nurses, and to charity organizations, and through these channels they can be instructed and educated.

DR. JOHN A. ROBISON said much can be done if pressure is brought to bear on the city officials, so that they will give the local board of health more power to carry out proper sanitary measures.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting of the Section on Pediatrics, Jan. 8, 1903.

Henry Heiman, M.D., in the Chair.

Ulcero-Membranous Stomatitis of Vincent.

DR. W. N. BERKELEY presented a boy of six years whose tonsil presented on the upper margin a deeply-excavated ulcer. Smears from this showed the spirillæ and elongated bacilli described by Vincent as characteristic of this form of stomatitis. As yet but little was known concerning the relation of the spirillæ to the bacilli.

DR. CHARLES HERRMAN said he would predict that future bacteriologic study would show that this same ulcerative process occurred in other parts of the body than the throat.

A Case of Malnutrition Apparently Dependent on Hyperplasia of the Blood Vessels and a Small Heart.

DR. SARA WELT-KAKELS presented a little girl who was evidently badly nourished and very anemic. The speaker said that although the child was born at full term she had always been delicate and more backward than her sisters. Since last June she had suffered from severe and constant headache, associated with constipation and loss of appetite. A hypermetropia in both eyes had been corrected by glasses without relieving the headache. Examination showed the cardiac impulse to be in the fourth intercostal space and the peripheral arteries so small that it was frequent in counting the pulse to feel the brachial instead of the radial artery. There was some cyanosis at times. The gastric contents had been examined after a test breakfast with negative result except that there was some deficiency in the hydrochloric acid. The daily quantity of urine was between 350 and 500 c.c. instead of the normal quantity, 1,140 c.c., and the daily quantity of urea was only 6.25 gm. whereas it should be 18 gm. The blood pressure had been determined by means of the Gärtner tonometer to be 69 mm., the normal varying between 100 and 120 mm. Even the microscopic examination of the blood was negative. An *x*-ray examination of the chest in conjunction with the fluoroscope had given a remarkably clear view of the thoracic organs, and showed plainly the diminutive size of the heart. Dr. Welt-Kakels was of the opinion that the child's condition was mainly dependent on a hyperplasia of the blood vessels.

Report of a Case of Paroxysmal Hemoglobinuria.

DR. CHARLES HERRMAN reported this interesting case, which occurred in a boy of four years, of apparently healthy parentage. In infancy he had presented evidences of congenital syphilis and had been treated for this disease for about twelve months. He was anemic and below the average size of a boy of his age. The heart and lungs were normal, and the spleen was not enlarged. Malaria was excluded by the failure to find the plasmodia in the blood. The attacks of hemoglobinuria came on every few days when the boy first came under observation last fall, the attack usually beginning about 10 o'clock in the morning by irritability and peevishness, which was speedily followed by a sense of weariness, a chill and finally by the passage of dark, bloody urine. It was remarkable how quickly he would recover even from a severe attack; it was no unusual thing to see him playing around again within an hour

after the subsidence of the attack. The urine was found to be acid and albuminous, but it contained no sugar, and the microscope showed no red blood corpuscles. Hemin crystals could be readily demonstrated by the usual means. The speaker said that only about 20 cases of this disease had been placed on record, and of this number about one-half gave a history of congenital syphilis. Physical exertion and emotional excitement were determining causes of the attacks, and they could be brought on by baths or the immersion of an extremity in cold water. When there was a history of syphilis, antisyphilitic medication would effect rapid improvement. The attacks were most frequent in winter, and from the action of chilling in determining the attack it was obvious that these patients should be warmly clad and kept indoors in cold weather.

Otitis Purulenta Neonatorum et Infantum.

DR. MAX TOEPLITZ read this paper. He said that the high fever, often associated with stupor or convulsions, occurring in connection with otitis in early life not infrequently led to an erroneous diagnosis of cerebral disease. A positive diagnosis of meningitis could only be made by means of a lumbar puncture. Fortunately otoscopy was not very difficult in children; it was, however, very difficult in very young infants. When meningitis occurred it was the result of an extension of the inflammation through the mastoid-squamous fissure. Primary inflammation of the labyrinth in children was characterized by fever, convulsions, vomiting, dulness of the sensorium, stiffness of the neck and an irregular pulse. Acute otitis was the result of bacterial infection, usually with the *Diplococcus pneumoniæ*, the *Streptococcus pyogenes* or the *Staphylococcus pyogenes*. They gained entrance through the eustachian tube in connection with sneezing or blowing of the nose, or the use of the douche. A child with otitis should be kept quiet in bed, and in the early stages steam and the application of hot water bags were useful, but as soon as there was evidence of pus, the drum of the ear should be freely incised, having first carefully sterilized the ear. The opening in the drum should be in the posterior inferior quadrant. Spontaneous perforation often occurred, but it made an irregular perforation, and the resulting scars were apt to impair the hearing in time. The wiping out of the secretions, followed by dusting with a thin layer of antiseptic powder and the closure of the canal by sterile cotton constituted, in his opinion, the ideal treatment for these cases, but the method was only applicable to cases in which it could be done by the physician himself or by an unusually intelligent and capable attendant. For other cases it would be better to trust to syringing, using irrigations at first every hour, the solution having a temperature of 108 or 110 F.

DISCUSSION.

DR. E. GRUENING said that whoever expected to find on inspecting the ear of a child suffering from acute otitis the circumscribed or the general bulging of the tympanic membrane described in the books, would be disappointed, for, more commonly there would only be a general thickening and obscuring of the usual landmarks. The latter condition was, however, a sufficient indication for paracentesis. This winter he had seen a number of cases of otitis complicated with bronchitis, and he had been impressed with the rapidity of the subsidence of the cough after puncture of the ear drum. For children he favored syringing the ear, using a fountain syringe with the bag only a few inches above the patient's head; for adults, the dry method, already described in the paper, was preferable.

DR. E. FRIEDENBERG said that he had seen many cases of otitis media in children which had simulated gastroenteric disease. In several instances they had been at first diagnosticated as typhoid fever.

DR. CHARLES G. KERLEY said that if those who practiced much among children would familiarize themselves with the appearance of the ear in both health and disease they would be less apt to experience the mortification of seeing a case, diagnosed as pneumonia, suddenly lose all of its urgent symptoms on the appearance of a discharge from the ear. For irrigation of the ear he preferred to use a 1 to 10,000 solution of bichlorid of mercury, as often as every three hours for the first day or two. The nasal douche was a prolific source of ear affections.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment are answered in these columns without allusion to inquirer.]

Pneumonia.

Hooker, in *Med. Summary*, recommends the jacket of absorbent cotton, mustard paste locally for the pain of any accompanying pleurisy, not allowing blistering to take place. This may be followed by a local application of vaselin. In treating a child two years of age he advises the following:

℞.	Quininæ sulph.	gr. xxiv	1.65
	Pulv. opii	gr. ss	.03
	Ol. theobrom. q. s.		

M. Ft. suppos. No. viii. Sig.: Insert one into the rectum every three hours until the fever abates somewhat, then repeat it three times a day and finally one at night only.

When the foregoing seem to disturb the bowels the following is prescribed:

℞.	Acidi sulph. dil.	gtt. xxx	2
	Quininæ sulph.	gr. xxx	2
	Syr. zingiberis	℥ss	15
	Aquæ q. s. ad	℥ii	60

M. Sig.: One teaspoonful every three hours, diminishing the dose as the child improves, or increasing it if the fever increases.

The following is of value in reducing the fever:

℞.	Ammon. chlor.	gr. viii	.50
	Tinct. aconiti rad.	m. iv	.25
	Tinct. opii camph.	m. xv	1
	Syrupi tolutani q. s. ad	℥ii	60

M. Sig.: One teaspoonful every hour for three hours, then every three hours. When the fever is under control the time may be lengthened to once in four hours.

In cases late in the disease if the heart needs stimulation the following is given:

℞.	Ammon. carb.	gr. iv	.25
	Tinct. digitalis	m. xv	1
	Spts. frumenti	℥i	30
	Syr. tolutani q. s. ad	℥iv	120

M. Sig.: One teaspoonful every three hours; or:

℞.	Strychninæ sulph.	gr. i	.06
	Syr. tolutani q. s. ad	℥i	30

M. Sig.: Five drops after meals.

As a sequel a lingering cough may be present and under such circumstances the following may be given:

℞.	Creosoti	m. ii	.12
	Spts. vini gallici	℥ss	15
	Glycerini	℥ii	8
	Syr. tolutani q. s. ad	℥ii	60

M. Sig.: One teaspoonful three times a day to a child one or two years of age.

Insomnia.

The following is an outline of treatment of insomnia due to the various causes as suggested by the *Month. Encyc. of Pract. Med.*: In insomnia from pain, morphin, the coal tar products or large doses of chloral are indicated. Insomnia from reflex irritability, chloral, trional, sulphonal, are the best. When it is due to delirium or chronic insanity, hyoscyamin combined with morphin. And when there is loss of sleep from nervousness and worry the bromids should be given in doses of twenty to thirty grains (1.30-2.00) three or four times daily. One must bear in mind that chloral depresses the medulla and is at times dangerous to the heart, lung, kidneys and stomach.

Internal Hemorrhoids.

Ross, in *Virg. Med. Semi-Monthly*, states that in the treatment of hemorrhoids which protrude at stool and can be pushed back by manual effort, he administers a heaping teaspoonful of

compound senna powder the night before the treatment, to be followed by a glass of bitter water or a tablespoonful of epsom salts before breakfast the next morning. Supplement this by a high enema of normal saline solution before the operation; then cleanse the rectal region under antiseptic precautions. The following solution is then injected into the center of each tumor beginning with the tumor highest up:

℞.	Acidi carbol. (95 per cent.)	ʒii	8
	Glycerini	℥ss	15
	Aquæ destil. q. s. ad	ʒii	60

M. Sig.: Inject as directed.

When each tumor has thus been treated coat the mass with carbolized vaselin and gently push them well up into the bowel.

If much pain is present some opiate may be given. Rest, a light diet and unmoved bowels are enjoined for two days. Then the compound senna powder may be given again at night, followed by the salts in the morning and instruct the patient to avoid straining. The following ointment should then be given night and morning.

℞.	Nosophen	ʒi	4
	Cocainæ hyd.	gr. vi	35
	Ext. belladonnæ	gr. iv	25
	Ung. simplicis	ʒvii	28

M. Sig.: Apply locally on an applicator introduced well up into the bowel.

The author states that one treatment is generally all that is required.

RECTAL ULCER.

M. G. Price, according to the *Med. Standard*, recommends the following in the treatment of rectal ulcer from whatever cause:

℞.	Ext. hydrastis aqueous	ʒiiss	10
	Acidi carbolici	m. xxx	2
	Glycerini	ʒix	36
	Ext. hamamelidis flu.	ʒviss	195

M. Sig.: Add to one half a teaspoonful of this mixture an equal quantity of starch and two tablespoonfuls of warm water. Inject into the rectum and advise the patient to retain it over night.

Bedsores.

Palmer, in *Merck's Archives*, recommends a method in the treatment of bedsores due to pressure and atrophic changes aggravated by urine undergoing ammoniacal decomposition: A bag of soft linen is made sufficiently large to extend down the thighs and along the patient's spine. This bag is then filled with bran previously moistened with dilute sulphuric acid. Sufficient bran is used to make an easy cushion. By this method the urine which is constantly dribbling from the patient is absorbed by the bran and the sulphuric acid present neutralizes the ammonia. The proportions advised are about two ounces of sulphuric acid to a quart of bran. This should be renewed every second day. It only makes the bran slightly moist.

Diet in Chronic Endocarditis of Children.

Thompson, in *Pract. Dietetics*, states that children who have chronic valvular disease or enlargement of the heart, but who are not strictly confined to bed, should have their habits of eating closely guarded. They should eat slowly and moderately and at regular intervals, the heavy meal should be at noon, and a light supper two hours before retiring. Animal food is as a rule better for them than vegetables, but they may be allowed fresh vegetables, such as spinach, tomatoes or stewed celery. Rice and macaroni may be given. Bread should be eaten only when dry or toasted. Sweets should be omitted from the list, except very rarely jam or preserves may be given. Sweets are liable to cause flatulency and palpitation and excite the heart's action and produce unnecessary strain.

Aspirin in Diabetes.

R. T. Williamson, according to an article in *Med. Age.*, recommends the use of aspirin in the treatment of glycosuria and diabetes mellitus. This preparation seems to have the most influence in the less severe forms and is less serviceable in the acute forms in young individuals. In order to produce any reduction in the milder forms it should be given in doses of fifteen grains each four or five times a day. The patient should be watched for the appearance of toxic symptoms. It is best to begin with a small dose, ten grains two or three times a day and gradually increase the dose.

Acute Gout.

The following outline of treatment is recommended by the *Cleveland Med. Gazette* in the treatment of acute gout:

℞.	Vini colchici sem.	ʒiii	12
	Spts. ammon. arom. q. s. ad	ʒii	60

M. Sig.: One teaspoonful every three hours in water; or:

℞.	Tinct. colchici sem.	m. xx	1 30
	Potass. bicarb.	gr. x	65
	Aq. menth. pip. q. s. ad	ʒi	30

M. Sig.: At one dose, to be repeated every three hours; or:

℞.	Ext. colchici rad.	gr. vi	35
	Pulv. ipecac. et opii	gr. xii	70
	Ext. colocynth. co.	gr. xii	70

M. Ft. pilulæ No. xii. Sig.: One pill night and morning; or:

℞.	Ext. colchici rad.	gr. x	65
	Pulv. digitalis		
	Ext. colocynth. co., ää	gr. xx	1 30

M. Ft. pil. No. xx. Sig.: One or two pills to be taken three times a day.

Yeo recommends the following as a remedy in acute gout:

℞.	Tinct. aconiti rad.	ʒi	4
	Morphinæ sulph.	gr. ii	12
	Antimonii tartarati	gr. i	06
	Syr. zingiberis	ʒss	15
	Aquæ q. s. ad	ʒii	60

M. Ft. mistura. Sig.: One teaspoonful every three hours in water; or:

℞.	Vini colchici	ʒss	2
	Mag. carb.	gr. xv	1
	Aq. cinnamomi	ʒi	30

M. Ft. haustus. Sig.: To be taken at bedtime.

Pericarditis.

The following combination, as noted in *N. Y. Med. Jour.*, is recommended as a local application in relieving the cardiac pain occurring in pericarditis:

℞.	Methyl salicylatis	ʒiiss	10
	Menthol	gr. lxxv	5
	Essent. lavendulæ	gtt. xv	1
	Petrolati	ʒiiss	10
	Lanolini	ʒi	30

M. Sig.: Apply locally.

Earache.

The following combination was first recommended by G. L. Richards in 1898 in the treatment of earache in children. A full presentation of the subject is given in THE JOURNAL, Jan. 24, 1903, page 222:

℞.	Acidi carbol.	m. vii	50
	Ext. opii fluidi	m. vi	35
	Cocainæ		
	Atropinæ sulph., ää	gr. iii	20
	Aquæ	m. lii	3 40
	Gelatin	gr. xviii	1 20
	Glycerin	ʒiiss	10

M. Ft. Bougies No. xlii. Sig.: One to be moistened and inserted into the ear.

OTITIS MEDIA PURULENTA.

The following is recommended by N. G. Ward in *Amer. Ther.*:

℞.	Formalin	gtt. v	30
	Alcoholis	ʒii	8
	Aquæ q. s. ad	ʒi	30

M. Sig.: To be dropped into ears as occasion demands.

Tinnitus Aurium.

Lewis, in the *Phila. Med. Jour.*, states that the administration of nitroglycerin or the inhalation of amyl nitrite will lessen the ringing in the ears due to anemia and increases that due to hyperemia. In the latter affection the general health should be improved and sedatives given. Hydrobromic acid is of the greatest service and should be administered in fifteen minim doses three times a day, well diluted in water. If the labyrinth is congested pilocarpin is of most value. When the tinnitus is unaccompanied by deafness a solution of strychnia,

gr. 1 to the ounce, should be introduced through the eustachian catheter into the tympanic cavity.

The following combination is advised by Gleason in the catarrhal forms:

B. Argenti nitratis	gr. 1/4	015
Ext. hyoscyami	gr. 1/3	020
Strych. sulph.	gr. 1/30	0020

M. Ft. pilula No. i. Sig.: One such after each meal.

Ammonium muriate is recommended in tinnitus of nervous origin. Conium hydrobromate, gr. 1/60 three times a day and tincture of arnica in fifteen minim doses have also been used with success.

Diarrhea in Puerperal Infection.

According to the *Rivista Medica* the following is of service in checking the diarrhea in puerperal infection:

B. Calcii chloridi	3ss	2	
Tinct. opii	gtt. xx	1	30
Syr. morphinæ	3v	20	
Aquæ lactucarii	℥viii	240	

M Sig.: One tablespoonful as required.

Medicolegal.

Ten Thousand Dollars for Fracture of Thigh.—In the case of Waldie vs. the Brooklyn Heights Railroad Company, a licensed Sandy Hook pilot met an accident which resulted in a fracture of the thigh, with permanent disablement, and the loss of his occupation, involving the diminution of income to the extent of $125 a month. Under these circumstances, and in view of other recoveries which have been upheld, the Second Appellate Division of the Supreme Court of New York holds that an award of $10,000 damages could not be considered excessive.

Liability of Hospital for Assault on Patient.—The case of Galesburg Sanitarium vs. Jacobson, as it is entitled in the Appellate Court of Illinois, Second District, was brought by the latter party to recover damages from the former, a corporation conducting a hospital, in which he was a patient for some two months, and, he alleged, was assaulted, beaten, mistreated and injured by the servants and employes of the institution. He was ill, the court says, and was a patient residing at the hospital for treatment, and was paying for the services he received, and he was entitled to reasonably kind treatment, so far as the nature of his malady would allow. No assault on him was justifiable, except so far as it was necessary to control him at times when he was insane or delirious. On the occasion in question the servants unnecessarily abused him, and inflicted on him injuries for which the jury were warranted in holding the master responsible. There was no claim that this was a charitable institution, nor any question as to its liability for the negligence of its employes on that account. The fact that the jury awarded but $100 as damages indicated they were not governed by passion or prejudice.

Good Consideration to Support Action for Services.—Several weeks after his daughter, without his knowledge, went to a hospital for medical treatment a father, on learning, through the physician who treated her, about her condition and what the bill for her treatment and board in the pay department was, promised to pay it, but died without doing it. The physician sued the administrator of the father's estate for the amount of the medical services rendered the daughter, and obtained judgment therefor, which the Supreme Court of Mississippi affirms, in the case of Biglane vs. Hicks. It says that there was no evidence on which it could be said that the debt sued for was charged originally to the daughter, so as to bring into the decision of it the question of the statute of frauds, which requires a promise to answer for the debt of another to be in writing. And it holds that if the father was not liable for the services sued for, because they were rendered to a helpless member of his family, who sorely needed them, yet continued service and treatment of the daughter for several weeks by the physician, at the special request of the father, on his promise to pay for the services sued for, as well as for future services, constituted a consideration to support this action.

When "Totally Disabled and Confined to the House."—In Mutual Benefit Association vs. Nancarrow, where the former insured the latter and, it was alleged, promised to pay him a certain sum per week if, from certain causes, he should be totally disabled and confined to the house, the Court of Appeals of Colorado holds that the words "totally disabled," as well as the words "confined to the house," must receive a reasonable interpretation. The purpose of the policy was to indemnify the insured against loss occasioned by inability to attend to his work or business on account of sickness. The total disability contemplated by the instrument did not mean a state of absolute helplessness. The insured might have been able to walk—he might have been able to ride on the car to his physician's office—and still have been entirely incapacitated for work or business. In view of the object of the contract, if he was so incapacitated, he was, the court thinks, totally disabled, within the meaning of the policy. Nor, applying the same rule, does the court think that the words "confined to the house" were intended to mean a constant restraint within doors. One may be sick, it says, and still able to move about and, on occasion, temporarily to pass to the outside. A complete and enforced withdrawal from business or work was undoubtedly necessary, under the policy; but exceptional and temporary absences from the house were not inconsistent with the idea of a general confinement within it. The complaint said that the insured was confined to the house, except at intervals, when he rode on the cars from his house to his physician's office; and, the court thinks, a sufficient confinement was alleged, to answer the requirements of the policy.

Fixing Compensation for Attending Smallpox Patients.—Section 5 of chapter 123 of the Laws of Maine of 1887 provides that the municipal officers "shall regulate and audit all fees and charges of persons employed by each board of health, in the execution of the health laws and of their regulations." In the case of Clement vs. the City of Lewiston, an action brought by a physician to recover for professional services rendered in attending smallpox patients, no specific sum was agreed on for his compensation. He was employed by the secretary of the board of health of the city. The city claimed that it was a condition precedent to the physician's right to maintain the action that the municipal officers had discharged the duty imposed by said section 5, or to show an attempt on his part to have them do so. The presiding justice instructed the jury that if the municipal officers failed to make any regulation or auditing of his account at the time, and there being, when these services were performed, no regulation touching the fees and charges to which he might be entitled, then he was entitled to recover a reasonable compensation. The Supreme Judicial Court of Maine holds that this ruling was correct. It says that the municipal officers could have fixed the fees before the services were rendered, and if they had done so, and it was known to the physician, his rendition of services after that would be regarded as an acceptance of the terms made by the municipal officers, and his right to recover would be limited to that. In the absence of such action by them for any services rendered by the physician under a legal employment the city impliedly promised payment therefor of a reasonable sum. The right to "regulate" fees should be exercised, if at all, before the services are rendered. To "audit" charges in bills rendered does not mean to determine their amount in the sense of binding the other party. To audit is "an examination in general"; "an examination of accounts"; "compare the charges with the vouchers." Webster. On such auditing the bill would be approved or rejected. If rejected, it would not preclude recovery if the physician had a meritorious cause of action. Such auditing can not be regarded as a condition precedent to recovery. The physician's rights did not depend on approval of the municipal officers. This statute gives certain authority to municipal officers and imposes a duty on them, but it is directory. It does not make it the duty of the physician to procure their action before enforcing his claim. Offered evidence of the action of the municipal officers after the physi-

cian's services were rendered, in attempting to fix the amount of his compensation, was rightly excluded. One party to a contract, after performance by the other, can not determine the amount of compensation without the consent of the latter. An offer to prove amounts paid by the city for similar services in previous years was also rightly refused. Such payments might have been on express contracts, or been the result of a controversy or compromise, or have been for services rendered by physicians of small experience or limited skill or reputation, or under peculiar and exceptional conditions. It would be unsafe, and might be unjust, to adopt them as a criterion for the compensation to which the physician suing was entitled.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal.

February 28.

1 *Notes on Plague as Observed by the Health Authorities of Sydney, New South Wales. G. Frank Lydston.
2 Cases of Intestinal Reaction, with End-to-End Union. C. S. Hamilton and W. D. Hamilton.
3 *The Diagnosis and Treatment of Contracted Pelvis. Warren R. Gilman.
4 *Hypodermoclysis; Experiments, Technic and Clinical Uses. Robert C. Kemp.
5 Medical Organization and the Present Status of the Code of Ethics of the American Medical Association. Charles A. L. Reed.

1. Plague in Sydney.—Lydston gives a very interesting account, calling attention to the absence of contagion by fomites, the method of infection through insects and the part borne by rats, which is strongly confirmed by the Sydney experience, the non-contagious character of the bubonic and septicemic forms, and the possible contagion of the pneumococcic type. It is apparently difficult to determine just what ships have brought the plague to port, as rats carry the disease for a considerable period. One animal affects another during the voyage, so that fresh cultures are brought to port. The interesting points are the cerebral toxemia, decline in mortality after the seventh day, speedy death, which is attributed either to the relatively large doses of multiple "bite" inoculations or to individual susceptibility, or to both together, and the trivial nature of the buboes, which seem to be only casual phenomena. Prevention seems to be reduced to simply the prevention of rats from going ashore, frequent fumigation of ships, knowledge of the health of rats in the exposed cities, and the keeping down of their numbers, isolation, general cleaning up, fumigation of infected and suspected premises and the clearing up of plague infection. The prophylaxis of plague is an expensive matter. Sydney has expended as high as $6,000 or more a month in the extermination of rats alone.

3. Contracted Pelvis.—Gilman calls attention to the importance of the condition, and gives the generally known facts in regard to the viability of the fetus within certain diameters. In case of slight or moderate contraction, he thinks it is best to leave the patient alone as long as progress is being made. He insists on the practical value of pelvimetry and the low mortality of cesarian section, which is less than 5 per cent. under proper conditions. It should never be performed, however, on an exhausted patient or one exposed to infection.

4. Hypodermoclysis.—Kemp has experimented on animals to test the rapidity of absorption and the specific action of normal saline solution on the kidneys, finding that it promotes renal secretion and reduces renal congestion. The technic and indications are given at length. It will be of value in the following conditions:

> In diarrheas with excessive loss of fluid, as in dysentery, cholera, cholera morbus, cholera infantum, typhoid and allied diseases; pneumonia, septicemia, pyemia, peritonitis, pyelitis, septic endocarditis, puerperal sepsis, purpura hemorrhagica, severe burns, toxemia due to colon bacillus, tetanus, jaundice, plague, yellow fever, scarlatina, measles, typhus, diabetes, shock; hemorrhage from any cause; as an eliminant in diphtheria, following antitoxin injection; in toxemia of diphtheria, or from any cause; in any coma due to toxemia; in puerperal eclampsia—preceded by venesection; in olliguria, uremia, suppression of urine, renal congestion; in pulmonary edema, pleurisy with effusion, or ascites due to oliguria; in poisoning, as an eliminant, as from carbolic acid, alcohol, opium, carbonic acid gas, and especially in belladonna poisoning. In the last condition frequent catheterization should be employed.

He notices the possible use of hypodermoclysis with sodium salicylate as a diuretic, and the assertion in France that incipient tuberculosis can be diagnosed by means of reactions which occur from this agency. Kemp does not, however, consider this assertion confirmed by his own observations. He thinks it might be useful in toxemias and the high temperature of tuberculosis, but not likely to have any specific effect on the disease. Dr. J. L. Barton has conducted some clinical experiments, as yet unpublished, in which these views are confirmed, and it will probably be worthy of further trial in selected cases as an adjunct to other treatment.

American Medicine, Philadelphia.

February 28.

6 *Are Antiseptics of Any Value in Hand Disinfection? Edgar R. McGuire.
7 *Chronic Sphenoid Abscess. Lewis S. Somers.
8 Chronic Diarrhea. Edwin Zugsmith.
9 *Cancer Statistics in the Twelfth Census of the United States. Harris Moak.
10 *An Interesting Modification of Technic in Penrose's Operation for Nephropexy. Frank Donaldson.
11 *Briefs on Physical Training. G. Frank Lydston.
12 The Use of Truth and Falsehood in Medicine: An Experimental Study. Richard C. Cabot.

6. Hand Disinfection.—McGuire concludes that:

1. Absolute sterility of the hands is impossible by any method.
2. There is no royal road to sterilizing the skin—nothing takes the place of long and vigorous mechanical scrubbing.
3. The longer the hands are scrubbed under aseptic precautions the nearer the approach to sterility.
4. The use of antiseptics on the skin is, at least, questionable; under the usual conditions, it is distinctly harmful.
5. When the true value of antiseptics is understood we will have cleaner hands, due to more conscientious scrubbing.
6. The use of rubber gloves, while not ideal, is the nearest approach to it.
7. The operator whose hands perspire freely ought to wear gloves in every case, regardless of all objections to them.

7. Chronic Sphenoidal Abscess.—Somers holds that this condition is not infrequent, but not usually diagnosed. He gives the anatomic data as to the parts involved and the symptoms, noticing particularly the constant nasal and pharyngeal symptoms, pain, ophthalmic symptoms when present, and reports a case. The treatment is outlined, embracing free drainage of the sinus and cleansing of the parts.

9. Cancer.—Moak analyzes the Twelfth Census statistics as regards cancer, and finds that cancer and tumor have not increased in any great proportion over several other diseases common in adult life and old age. The geographical distributions correspond almost exactly to that of people of greatest age, and cancer and tumor are, therefore, most frequent in those sections where old people are more numerous.

10. Nephropexy.—The method of technic here described by Donaldson is that of Dr. Milbank Johnson of Los Angeles, which is the same as that of the Penrose-Beyea operation until the quadratus is opened, the perirenal fat exposed, the space of Gerotta entered and the kidney separated by blunt dissection from its fatty capsule. Johnson's procedure from this point is:

> He makes an incision the length of the kidney through the fatty capsule, the latter being dissected from the kidney but not removed. He then makes four openings about 15 mm. on either side of the main incision. These incisions of course go through skin, fascia, and muscle. The catheter is then passed through the opening, on through the fatty capsule a few millimeters to the side of the main incision in the same, around the kidney proper about 1 cm. from and above the ureter and renal vessels and out through the fatty capsule and the opening on the opposite side. Similarly, a second catheter is introduced through the third opening and brought around below the ureter and vessels of the kidney and out through the fourth opening. The incision in the fatty capsule is then closed and the main muscular incision brought together with continued sutures of catgut and a subcuticular silkworm-gut stitch for the skin. The operator is now ready to manipulate the catheters. There is of course absolute freedom of movement and taking one end in either hand the kidney may be placed in relatively any position toward the abdominal wall which the operator sees fit; in other words, he can get the exact tension on the kidney he desires. Having satisfied himself that the organ is properly placed, the ends of the catheters are clamped together. Emerging as they do from the side of, instead of through the original wound, they tend to draw together the sides of the same instead of forcing them apart as is the case in Penrose's method.

His method of bringing out and fixing the ends of the catheters greatly facilitates the healing and dressing of the wound and comes nearer to the ideal of what the operation of nephropexy should be.

11. **Physical Training.**—Lydston calls attention to the individual equation. Each person should be studied by himself. He notices the differences in the chest form and capacity, the short and thick and the long and shorter muscles and tendons and the different methods of treatment which they require. The evils of athletics are noticed; over-development of muscles and organs often leads them to degenerate from disuse when change in occupation that inevitably follows in many cases is taken up. He thinks the training habit is hard to break; it is as bad as the alcoholic habit in many cases and, while in many instances no particular disaster occurs, there are numerous cases where serious consequences result.

Medical News, New York.

February 28.

13 *A New Use for Thyroid Extract; A Cure, or at Least a Complete Control of Hemophilia Through Its Administration; Its Effect Also on Another Form of Hemorrhage. Eugene Fuller.
14 *Cortical Hemianopsia and Sector Defects of the Visual Field. Edward Jackson.
15 *Ossiculectomy. Edward B. Dench.
16 *The Discrepancy between Clinical Manifestations and Pathological Findings in Appendicitis. Nathan Jacobson.
17 *The Treatment of Typhoid Fever. G. Wythe Cook.
18 Aseptic Surgery on the Niger Delta. Frederic Griffith.
19 *Remarks upon Adherent Pericardium. Geo. M. Swift.
20 *Hyoscin in the Treatment of Morphinism; Its Office and Value. George E. Pettey.
21 *The Scope of Vaginal Section. Egbert H. Grandin.

13. **Hemophilia and Thyroid Extract.**—Fuller reports a case of hemophilia in a boy treated unsuccessfully by other remedies and relieved by 2½ gr. of thyroid extract three times a day. The second case was in a man about 55 years of age, who had hematuria almost constantly from the prostatic sinus, which was also similarly relieved with good results, using 5 gr. doses three times a day.

14. **Hemianopsia.**—Several cases of hemianopsia are reported and discussed by Jackson. Two of them seemed to support the view of Hun, Wilbrand and Henschen, that the upper lip of the calcarine fissure is connected with the upper part of the retina, having to do with the lower quadrants of the field.

15. **Ossiculectomy.**—Dench finds the indications for ossiculectomy in three classes of cases: 1. Those in which the patient is suffering from what is commonly known as chronic non-suppurative otitis media with intact drum membrane, and where operation is undertaken either for the improvement of the function of the organ or for the improvement of certain symptoms, such as subjective noises and vertigo. 2. Those cases in which operation is undertaken primarily for the relief of chronic suppuration, the removal of all dead bone, etc., the main object being to cure the otorrhea. 3. Cases where there has been previous suppuration, but it was so slight as to cause no inconvenience, but the results of the suppurating processes remain, binding down the ossicular chain by adhesions and impairment of function. The paper gives a lengthy discussion on operations.

16. **Appendicitis.**—Jacobson reports cases showing the occasional obscurity of symptoms in appendicitis and emphasizes the fact that we must not depend too much on the so-called nervous symptoms, or be misled by apparently mild constitutional manifestations. Local signs are to be regarded as more significant and reliable. The persistence and aggravation of any manifestation is to be viewed with alarm and suggests progress of the disease. The diagnosis of catarrhal appendicitis, because of the apparently mild symptoms presented, is often unwarranted. The restriction of the inflammatory process to the mucous surface of the appendix without ulcerative destruction is probably rare. True conservatism, if by that we mean the conservation of life, is along surgical and not medical lines in every case of progressing appendicitis. Lastly, every case in which the diagnosis of appendicitis can be made, demands surgical rather than medical care. The question is simply as to when a surgical operation should be performed, and the earlier the better the results.

17. **Typhoid Fever.**—Cook's article gives the general treatment of typhoid. He would keep the patient on a liquid diet. He thoroughly believes in hydrotherapy and that the greatest care should be exercised in returning to the solid diet. Constipation is, he finds, more frequent than the opposite condition. An enema is generally sufficient to relieve it.

19. **Adherent Pericardium.**—Swift thinks that we should be aware that such a condition is not rare, that the great irregularity of action, the patient not appearing as ill as the great irregularity of heart action would indicate, the indraw of intercostal spaces with systole, the marked dyspnea and consequent apprehension, and the great enlargement of the liver, with or without ascites, are important diagnostic signs. In hospital cases the prognosis is bad, but in private practice he has known cases where life has been continued many years. He thinks with proper treatment, abundance of nitrogenous food, arrest of the rheumatic poisoning, we might give a fairly good prognosis.

20. **Hyoscin in Morphinism.**—Pettey advocates the use of hyoscin and criticises Crothers and Mattison, who condemn it. He thinks no remedy is better indicated. It is as important in the treatment of morphinism as chloroform and ether in the practice of surgery. Its office is very similar. It saves the patient from indescribable suffering, and renders the unsafe, impracticable and difficult, safe, practicable and easy.

21. **Vaginal Section.**—Grandin thinks vaginal incision commends itself for diagnosis, palliative treatment and for curative purposes. It is specially indicated in tumors that can be removed through the pelvic brim, but in cases of salpingitis of the right side, with ovarian abscess, especially with adhesions or involvement of the appendages, it is contraindicated. Unruptured and non-adherent ectopic gestation falls within the scope of vaginal section. He does not favor it generally in uterine displacement, which he thinks falls rather outside its scope.

Boston Medical and Surgical Journal.

February 26.

22 *A Few Remarks on Blood Pressure. James M. Jackson.
23 *Intestinal Obstruction Below the Ileocecal Junction. (To be continued.) Thomas H. Manley.
24 *The Treatment of Hemorrhoids. John O'Conor.
25 The Use of Cargile Membrane in the Nose in Order to Prevent Adhesions. Harris, P. Mosher.
26 Gonorrheal Urethritis without Symptoms. Arthur L. Chute.

22. **Blood Pressure.**—The means of ascertaining blood pressure are described by Jackson, who thinks that anyone who wishes to take the blood pressure should be equipped with a mercury manometer, in the first place, and then have the Riva Rocci armlet and the Gaertner finger ring. With the Riva Rocci the blood pressure should be taken with the patient in the recumbent position, and with the Gaertner method the patient may either lie down or sit up, but the finger should always be on a level with the heart. The patient should be under no mental excitement, which would cause elevation of tension. Two readings at least should always be taken. If they agree, the observation may be considered correct; if there is a marked difference, there has been some mistake, and the test should be repeated. He has used it in testing the effects of bromid of quinin in exophthalmic goiter without seeing any variation of the blood pressure of any account. He has found it of decided value in cases of nephritis and arteriosclerosis as an aid to diagnosis. The blood pressure is normally higher in males than in females. While a pressure of 140 to 150 may be normal for a man, it is abnormal for a woman. Elderly people generally have an elevated pressure, owing to arterial rigidity. Low pressures are not common. It is high pressure we have to deal with principally. A pressure of 200 or more may be considered more or less dangerous, while that of 250 or over is very dangerous, and only seen in grave cases. Higher than these are recorded, but are rare and probably only occur in bad head injuries. He urges all who are teaching or doing clinical work to try this new method of testing the blood tension.

23. **Obstruction of the Large Intestine.**—Manley describes the various forms and sites of the strictures that may occur, such as from malignant disease, syphilis, gonorrhea, etc. Stricture of the large intestine is rarely if ever impermeable,

and it is never sudden or acute in its etiology. It is different from that of the small intestine, as a general rule, depending on intrinsic instead of extrinsic influences. The treatment should not be too radical. There is seldom extreme urgency, as in case of obstruction of the small intestine. He uses measures that will not jeopardize life. Sedatives, local and constitutional, are important. Quicksilver has been employed with success in some cases; hot stupes, kneading the abdominal walls, massage, electrization, etc., in proper cases are valuable. Rectal enemata and instrumental dilatation are the most helpful means of relief in nearly every case, but they should be used with discrimination. A long, stiff rectal tube should be employed, with caution lest serious harm may result. Dilatation of any segment of the large intestine, excepting the rectum, by bougies or sounds is a reckless proceeding, especially in malignant growths, but it may be of value in rectal strictures. Still, he has seen mortal shock follow an attempt at canalization of a scirrhus in a firmly strictured rectum.

24. **Hemorrhoids.**—O'Conor advocates the Whitehead operation, and describes its technic as performed by him.

Medical Record, New York.

February 28.

27 *Remarks on Achylia Gastrica and Pernicious Anemia. Max Einhorn.
28 *Recent Researches on the Voice. E. W. Scripture.
29 *Doctrine of Survivorship in Case of Two or More Deaths in a Common Disaster. Theodore Sutro.
30 *The Etiology and Prevention of Senile Cataract. J. Wilkinson Jervey.

27. **Achylia Gastrica in Pernicious Anemia.**—Einhorn gives his experience on the possibility of achylia returning to the normal condition, and reports several cases, and on the abrupt development of the condition in pronounced cases of hyperchlorhydria and, after many years' persistence, spontaneous return to the normal state. He gives a tabulated statement of the blood examinations in some 15 cases, several of which have a close resemblance to pernicious anemia, and he discusses the latter condition. His experience is against the assumption that pernicious anemia is caused by atrophy of the stomach, for the following reasons:

1. In most cases of achylia gastrica a nearly normal condition of the blood is found.
2. We occasionally observe the presence of gastric juice in cases of pernicious anemia, sometimes even in an increased amount. If pernicious anemia were caused by an atrophy of the gastric mucous membrane, the achylia would have to be well marked, as soon as the symptoms of the blood disease are apparent.

We can not deny that achylia and pernicious anemia may occur together. These cases are, however, in the minority, and would probably point to the fact that there is a common cause for both affections, or that pernicious anemia finds a ready soil in cases of achylia.

28. **The Voice.**—Scripture describes the methods of taking graphic voice curves and the bearing of the results on the production of tones.

29. **Survivorship.**—The legal question of survivorship is discussed by Sutro, president of the New York Society of Medical Jurisprudence. It was suggested by the recent Fair case in France, which has been before the French and California courts. He holds the presumptions of the Roman law, based as they are entirely on age and sex, and likewise the statutory presumptions in vogue in some countries of simultaneous death, appear neither of them to rest on any logical foundation. The most reasonable and logical rule, he says, would seem to be one which has been most generally adopted in our law, namely, that when it is necessary or important to ascertain or consider which of several persons survived, and there is no evidence, no presumption whatever will be indulged in, but the conclusion adopted that all perished simultaneously.

30. **Senile Cataract.**—Jervey discusses the prophylaxis of senile cataract, and sums up that:

Many cases of cataract, especially of the senile form, are started and aggravated in their progress by the friction of a ceaselessly moving iris, which has been roughened, hardened, stiffened, thickened, by disease. Many of these cases can be arrested, or their advance indefinitely postponed or prolonged, chiefly by the careful performance of the simple little operation of sphincterectomy.

Philadelphia Medical Journal.

February 28.

31 *Tropical Diseases; Abscess of the Liver. (Continued.) C. F. Kieffer.
32 *Surgical Affections of the Biliary Tracts. (To be continued.) John B. Deaver.
33 Rupture of the Urethra; Prosalpinx; Excision of Tumors of the Neck. Thomas H. Manley.
34 *Is Nephroptosis Hereditary? John G. Sheldon.
35 A Case of Trigeminal Neuralgia Complicating Typhoid Fever. Charles J. Aldrich.
36 *The Toxemia of Pregnancy. William H. Wells.

31. **Tropical Diseases.**—This sixth lecture by Kieffer deals with the prophylaxis and treatment of tropical dysentery. The first indication is removal of the etiologic factor, destruction of the ameba and elimination of intestinal bacteria by the remedies mentioned, such as silver nitrate, etc. He adds protargol to the list. Next comes the relief of the chronic liver congestion, and here he advises draining by purgation, noticing the saline sulphates as useful. Alcohol should be prohibited, and the meat diet restricted. Counter-irritation by dry heat or poultice may be employed for the liver engorgement and in severe cases hepatic phlebotomy is indicated. When active dysentery is present the use of ipecac as in acute dysentery may have a marked effect, as well as quinin where malaria is present. Explorations for suspected pus must be frequent and searching, and the details are described, as well as that of the operation by incision. Rigid asepsis, of course, must be employed. Kieffer disagrees with the advice to scrape the abscess wall and, ordinarily, would not wash out the abscess. If the sac be very large, making a counter opening necessary, then washing of the sac is safe. If, after operation, amelioration of symptoms does not ensue, the conclusion is forced on us that another focus has formed that must be searched for. Similarly in cases where rupture has taken place, into the lung or bowel, and the symptoms continue, an attempt must be made to evacuate the cavity through the skin.

32. **Surgery of the Biliary Passages.**—Deaver's article is a general description and discussion of the conditions of biliary surgical disease.

34. **Nephroptosis.**—The question whether nephroptosis is inherited is raised by Sheldon. He gives an account of a family in which five members were thus affected, all females. None of the other members of the family were examined. He thinks the condition occurs more often in children than is suspected, and reports a case where it was found, producing unfavorable symptoms, relieved by operation.

36. **Toxemia of Pregnancy.**—Wells' article is concluded in this issue. He discusses the diagnosis, which is made from the symptoms and the amount of solids and urea excreted. Albumin alone is not sufficient for the diagnosis. The symptoms may somewhat resemble hysteria, and hysteria may be caused by toxemia. Occasionally they may simulate acute indigestion and sometimes miscarriage. In the majority of cases the prognosis is good provided the patient is under a physician's care and disease of the liver and kidneys is absent. He would say that the prognosis for a pregnant woman whose excretions were faulty, was only good in so far as she followed out the advice of the attending physician. The most important point in treatment is to increase the elimination by the bowels, kidneys, liver and skin. He would cut off the meat diet in most patients, giving a moderate amount of nutritious food; fruits, vegetables rich in starch may be allowed, but sandwiches and stimulating diet, coffee and tea are prohibited as a rule. Malt liquors are bad; the least harmful, if alcoholic beverages are insisted on, are the dry Rhine wines. The clothing should be such as to increase elimination by the skin. A suitable amount of outdoor exercise, taken short of fatigue, and the free ingestion of water, to increase the action of the kidneys, are advised. The patient should take at least a full glass of Buffalo or Londonderry lithia or apollinaris or some carbonated water before each meal, at bedtime and on rising in the morning. The laxative waters serve a double purpose, but their taste is objectionable to many persons. Sweet spirits of niter may be given, and in severe cases of toxemia with high pulse tension, he would give some cardiac depressant like veratrum viride, or if syncope or cardiac irritability is present, digitalis either alone or with small doses of nitroglycerin, will give good results. He

speaks particularly of calomel as an eliminative and the use of a cathartic, preferably the salines, keeping up the laxative for a number of days until the patient has had a sufficient number of profuse watery stools. Bowel irrigations and lavage are also required in some cases.

Cincinnati Lancet-Clinic.

February 28.

37 *Aprosexia in Relation to the Eye, Ear, Nose and Throat, Especially in Child Growth. Derrick T. Vail.
38 Medical Sqnibs. Bronson S. Horne.
39 Surgery of Prostate, Pancreas, Diaphragm and Spleen. (Surgery of the Pancreas.) (Continued.) B. Merrill Ricketts.

37. Aprosexia.—This condition, first described by Guye in 1887, is specially emphasized, as it has occurred in Vail's experience. He thinks it may cause various impairments of the mental development as well as ocular defects. The storm center, of course, is in the nasopharynx. He says we should not wait for nature to "outgrow" the defect or disease. The results of proper treatment are brilliant.

St. Louis Medical Review.

February 21.

40 Why Condensed Milk and the Proprietary Foods Are Imperfect Foods for Infants. John Zahorsky.
41 Criminal Abortion. L. E. Newman.

February 28.

42 *Radical Relief of Chronic Deafness, with Aural Vertigo or Headnoises, by Resection of the Auditory Conducting Mechanism. Robert Barclay.
43 A High Degree of Convergent Squint in a Patient Thirty-eight Years Old—Operation and Result. J. E. Jennings.

42. Ossiculectomy.—The practical lesson which Barclay wishes to convey in this article is that clinical experience seems to confirm the opinion that resection of the auditory conducting mechanism, properly done, will radically relieve deafness—no matter of how long standing, nor however treated heretofore—proportionately to the distinctness of the following characteristic symptoms when found together, namely, speaking habitually in an abnormally moderated or low tone of voice, with better hearing in a noise.

Medical Age, Detroit, Mich.

February 10.

44 *Chronic Proctitis. J. A. MacMillan.
45 Acetozone in Typhoid. John F. Bennett.
46 *Some Habits of Malaria not Controlled by the Mosquito. Charles Hicks.

44. Chronic Proctitis.—MacMillan thinks that in many cases of constipation or diarrhea where the cause is not readily found, a thorough rectal examination should be made. Acrid or drastic cathartics produce much irritation and congestion of the rectal mucous membrane, especially in cases of chronic proctitis, and should be restricted in their use and saline cathartics substituted. Physical exercise in certain cases of constipation is harmful. Straining at stool is particularly injurious where there is hypertrophy of the rectal membrane. A temporary prolapsus is produced and this causes occlusion.

46. Malaria.—This article of Hicks is an interesting study of medical geography. He points out that a certain region over the cretaceous formation in Georgia is the special home of hemoglobinuria, which is absent from the surrounding country. He attributes this hypothetically to the bad drinking water in this region. The estivo-autumnal parasite is found in both sections. He suggests also a certain connection between the diet and malaria.

Journal of Tuberculosis, Asheville, N.C.

January.

47 *On the Relations between Human and Bovine Tuberculosis. P. von Baumgarten.
48 *The Cinnamic Acid (Hetol) Treatment of Tuberculosis. A. Landerer.
49 The Urinary Calcium Excretion in Tuberculosis. Alfred C. Croftan.
50 *The Early Diagnosis of Tuberculous Laryngitis. Richmond McKinney.
51 *Methylene Blue in Consumption. Henry Herbert.
52 *Tuberculosis of the Cervical Lymph Glands. Daniel Eisendrath.

47. Human and Bovine Tuberculosis.—Professor von Baumgarten agrees with Koch in the non-identity of these two conditions in all respects. He is convinced that the tuberculous human subject is the principal if not the sole source of infection of others. He does not, however, fully agree with Koch that the sputum is the sole source of infection, and thinks the ingestion of tuberculous food has more or less to do with it. He lays special stress on heredity.

48. Cinnamic Acid in the Treatment of Tuberculosis.—Landerer, the originator of this method of treatment, gives his views and experience. He finds in the early cases about 90 per cent. of cures. In the more advanced cases, the weaker the patient the smaller the dose that should be given, continued over long periods. Cases are reported. In no other form than pulmonary tuberculosis does the method yield such good results. Laryngeal tuberculosis, so long as it is isolated, that is, not associated with extensive changes in the lungs, offers a good prognosis, but is unfavorable if it occurs late in connection with extensive pulmonary involvement. Patients with laryngeal tuberculosis require large doses, 20 to 25 mg. Intestinal tuberculosis is a favorable field, even if fever is present. It must be remembered, however, that during treatment signs of intestinal stenosis may appear. In renal tuberculosis the tubercles undergo cicatricial changes, but no effect is seen on co-existing purulent catarrh; therefore the clinical results are negative. Simple tuberculosis of the bladder yields a somewhat better prognosis, and very good results and permanent cures have been obtained in tuberculosis of the epididymis and vas deferens. The glands and scrofulous processes yield mostly favorable results, though sometimes they are tedious and require long treatment. The suppurating gland should be curetted and dusted with hetokresol (cinnamyl metakresol) and be drained. Surgical tuberculosis also gives a good prognosis. The suppuration is not influenced, however. Tuberculous wounds heal rapidly when dusted with hetokresol. Skin tuberculosis yields nicely to cutaneous injections of an alcohol solution of cinnamic acid, 1 part in 19. Treatment, however, is tedious. No good results have been obtained in brain tuberculosis.

50. Tuberculous Laryngitis.—A safe general rule, according to McKinney, is that when there is a persistent laryngeal catarrh with evidence of hoarseness not yielding to the ordinary measures, it should be regarded with suspicion and the case closely investigated and the lungs minutely examined. A peculiar sticking sensation in the region of the larynx is another constant symptom in the early stage. There are, of course, other conditions that may have identical symptoms, and syphilitic infection should be borne in mind and potassium iodid administered.

51. Methylene Blue in Consumption.—Herbert finds methylene blue of no special advantage in consumption; but it may relieve the cough and reduce expectoration. It is contra-indicated in sensitive or hectic cases.

52. Tuberculous Glands.—Eisendrath points out the special diagnostic features of conditions that may be confounded with tuberculosis, such as Hodgkin's disease, syphilis, epithelioma, etc. He thinks the treatment should be a radical one. The only exceptions are in children and in others where operation is not proper on account of slight gland involvement, and where family inheritance shows a strong tuberculous tendency and there are suspicious signs in the lungs. It is also inadvisable in much debilitated anemic children, especially if complicated with chronic bronchitis. External applications, especially iodin, do more harm than good.

Interstate Medical Journal, St. Louis.

February.

53 *Experiments with the Formalin Treatment for Streptococcus Infection in Rabbits. Oscar H. Elbrecht and C. A. Snodgrass.
54 *Operations for Cancer of the Mouth and Neck. G. W. Crile.
55 A New Surgical Table. Bransford Lewis.
56 Address of Welcome to Professor Lorenz. H. Augustus Wilson.

53. Formalin in Septicemia.—Elbrecht and Snodgrass have experimented on the effects of formalin in the blood on the metabolism of normal animals, and also of those in which septic infection exists. They have found that normal rabbits can bear formalin dilution of 1 to 500 when given in doses porportional to a liter in man, but in later experiments they have used a weaker dilution, 1 to 2000 to 1 to 5000, which is

safer. Thus far they have had two apparent recoveries as a result of this treatment. One rabbit, however, died later when, according to temperature records, he had become convalescent. The other has since become normal. Thus far they have injected 13 rabbits with formalin ranging in strength from 1 to 5000 to 1 to 500. With the exception of 3 which were killed for examination and 1 that died, the other 9 are living and in apparently normal condition. Four streptococcus infected rabbits were treated with normal saline solution, 2 died, 1 is apparently passing into a state of recovery, the other, being immune, was not treated. Two streptococcus rabbits were treated with 1/5000 dilution of formalin in normal saline solution; both died. Two rabbits similarly infected were allowed to go untreated, and both died on the second day, showing the culture to have been intensely virulent. Three streptococcus rabbits were treated with a 1/2000 dilation of formalin in water, and 2 recovered, 1 died. The third was allowed to go untreated and died in thirty-six hours. They do not attempt to draw conclusions from this limited number of experiments, but simply offer them for what they are worth.

54.—See abstract in THE JOURNAL, xxxix, p. 1131.

Archives of Pediatrics, New York.
February.

57 *The Prognosis of Tuberculous Peritonitis in Children. G. A. Sutherland.
58 *The Effects of Tight Diapers. A. C. Cotton.
59 Two Instructive Cases of Cerebral Pneumonia and Their Treatment. Louis Fischer.
60 *Pilocarpin in the Treatment of Scarlet Fever. E. W. Saunders.
61 A Case of Paroxysmal Hemoglobinuria in a Boy Four Years Old. Charles Herrman.

57. **Tuberculous Peritonitis.**—Sutherland finds that uncomplicated tuberculous peritonitis generally has a good prognosis, even when tuberculous pleurisy is present. It is less favorable when there is a strong family history of tuberculosis; an infancy passed under bad hygienic and dietetic conditions; a constitution of feeble resistant power or a history of severe infective illness in early life. Certain conditions or symptoms render it less favorable, such as continued pyrexia, rapid wasting, persistent diarrhea, rapid pulse, or recurrent acute exacerbations. It is also rendered less favorable in the presence of one or more of the following local complications: Tuberculous ulceration of the bowel; extensive caseation of the mesenteric lymph nodes, or of tuberculous masses; localized suppuration from infection through the lymph nodes or the intestine; obstructive symptoms from bands or matting of the intestine. It is bad in cases of rupture of the suppurating lymph node, or the perforation of an intestinal ulcer into the peritoneal cavity, in tuberculous meningitis and general miliary tuberculosis. In tuberculous peritonitis the prognosis is not appreciably affected by simple laparotomy.

58. **Tight Diapers.**—Cotton thinks the use of tight diapers on infants is likely to produce the justo-minor pelvis in the adult and that much of this prevalent deformity is due to just this cause. He suggests some care as to this point and better hygienic clothing. The ideal protection would seem to be afforded by a large blanket of light, flexible, non-conducting material enveloping loosely the entire infant below the neck, but it is hard to keep him inside such a garment as this. He mentions a bag-like garment that is now in use in some of the hospitals of Chicago and other cities.

60. **Pilocarpin in Scarlet Fever.**—The use of this remedy in scarlet fever is advocated by Saunders, who finds its benefit is due to its effect on the salivary and muciparous glands, with the absence of all tendency to myocardial or neural degeneration and of pulmonary complications. In hyperpyrexia hydrotherapeutic measures are the first to be used, followed by the administration of pilocarpin; even at ordinary temperatures, such as 104, it is better to precede each dose by a thermolytic bath. The first dose should be watched for idiosyncrasy, and if this is present a hypodermic of atropin will prevent disagreeable consequences. Subsequent doses should be graduated according to the effect of the first and the height of the temperature. Toleration is rapidly established. A parched mouth, however, should never be allowed during the disease.

The Alienist and Neurologist, St. Louis.
February.

62 *Hemorrhagic Internal Pachymeningitis in the Insane. J. E. Courtney.
63 *The Neural and Psycho-neural Aspects of Surgical Practice. Charles H. Hughes.
64 Simulation of Tabes Dorsalis. V. Krafft-Ebing.
65 Outlines of Psychiatry in Clinical Lectures. C. Wernicke.
66 The Erotopath in Society. Charles H. Hughes.
67 The Suggestive Treatment of Hysteria Gravis. V. Krafft-Ebing.
68 The Evolution of the Neuraxis. Charles H. Hughes.

62. **Hemorrhagic Internal Pachymeningitis in the Insane.**—Courtney finds this condition more or less pronounced in nearly 10 per cent. of all cases, and concludes that it is peculiarly associated with insanity, especially with paresis, alcoholism and dementia. It is twice as common in men as in women. It consists in hemorrhage and partial absorption and organization of the effused blood, forming a membrane.

63. **Neurology and Surgery.**—Hughes emphasizes the relations that exist between neurology and surgery, the actions of the neurons and attention to nutrition and conservation of these organs, also the psychiatric element in surgery. He thinks the surgeon should avoid all sources of psychic depression and consider the nervous symptoms of his patient before and after operation to ensure success. The possibilities of post-operative insanity are noted.

Journal of Cutaneous Diseases, New York.
February.

69 *The Histogenesis of Scales and Crusts. R. Sabouraud.
70 *Note on the Histology of Herpes Zoster. S. Pollitzer.
71 *The Value of Radiotherapy in Cutaneous and Other Cancers. Charles W. Allen.

69. **Scales and Crusts.**—In this article Sabouraud analyzes the origin of scales and crusts, which he finds is not exactly in accordance with popular notions, but he wishes to show that among the processes which go to make the scale of the usual histologic type, that is, the scale-crust, the process of hyperkeratosis is a reactional phenomenon of the second order. The two processes which form this scale and this crust are the exhalation at the surface of the skin of a serous "tide" and of a leucocytic "scum." These are the first two phenomena. As to the hyperkeratosis which covers the scale-crust with a corneous layer, it is a secondary reaction of the epidermis to the exoserosis and exocytosis, once they are produced. These two phenomena of exoserosis and of exocytosis dominate the formation of the scale in general as well as all crusts, excepting only the simple pityriasis capitis and of ichthyosis, which are exclusively produced by hyperkeratosis.

70. **Herpes Zoster.**—Pollitzer's article gives an instance which proves the occurrence of a variety of herpes affecting the rete Malpighii or hair follicles exclusively, a type that has not been heretofore described.

71. **Radiotherapy.**—While recognizing that the *x*-ray as a therapeutic measure is not a passing fad, Allen points out that its effect is at times to produce severe harmful symptoms referable to the heart, lungs and other internal organs, and absorption of disintegration products. Metastases may be encouraged and cancer itself may be produced in predisposed individuals. The method is not to be solely relied on in all cases of cancer. In the nodular, wart-like and dry growths on the skin, other means of removal, preferably by arsenical paste, should first be employed and the rays may then be applied. The indiscriminate application of the ray to all forms of disease as practiced by unscrupulous advertisers and quacks and the deceit practiced by calling other rays by this name, are likely to bring discredit on a method really useful whose effect is at times almost magical but often most disappointing.

Cleveland Medical Journal.
February.

72 A Study of Tuberculosis in Cleveland. William T. Howard, Jr.
73 *The Frequency, Site and Course of Tuberculosis in Cleveland. John C. Darby and Henry P. Parker.
74 *On the Nativity of Decedents from Tuberculosis in Cleveland for the Years 1895 to 1901. Cullen F. Welty.
75 *On the Relation of Age, Sex and Conjugal Condition to Deaths from Tuberculosis. George W. Moorehouse.
76 *The Distribution of Tuberculosis in Cleveland. Wm. O. Osborn and Frederick C. Herrick.
77 Municipal Prophylaxis. Martin Friedrich.

73. **Tuberculosis in Cleveland.**—The statistics of the prevalence of tuberculosis in Cleveland, as shown by a record of 658 autopsies, are discussed by Darby and Parker, who conclude that their figures of 29.6 per cent. of definite tuberculosis at autopsy falls considerably below the true figure, and would include their 5¾ per cent. of cases of apical adhesions, making a total of 35.5 per cent., or one-third of all autopsies showing tuberculous change. This they consider a very conservative estimate. Active tuberculous processes were found in practically one-half of all cases showing definite tuberculosis. In half of these cases it was the cause of death. Under 20 years of age active tuberculosis is almost always fatal, but later steadily decreases, so that death from tuberculosis is comparatively rare in persons over 60 years of age. The relative frequency of tuberculosis of the principal organs is, in order, as follows: lungs, bronchial glands, spleen, intestines, kidneys, liver and nervous system. The other portions of the body are rarely affected. The primary focus is almost invariably the lungs and occasionally the bronchial glands.

74. **Nativity of Tuberculosis Cases in Cleveland.**—Welty has analyzed over 3,000 deaths from this cause in Cleveland, and finds that only 730 of the individuals were born there; 1,203 were born elsewhere in the United States, and 1,306 foreign born. This gives 119 deaths to each 100,000 of the native-born population and 151 deaths to 100,000 of the foreign-born population, with a general mortality of 130 to each 100,000 of the total living population. He gives a comparative table from other sources of the deaths from tuberculosis in the various European countries, showing that the mortality from tuberculosis in those mentioned is in all cases higher than that of the Cleveland residents born in those countries. The Irish seem to have profited the least by change of residence and the Hungarians most.

75. **Age, Sex and Conjugal Condition in Tuberculosis.**—From a study of the Cleveland statistics in regard to these points, Moorehouse finds that the city furnished during the seven years from 1895 to 1901, inclusive, 8.7 per cent. of its total deaths from tuberculosis. It was the cause of 1.4 per cent. of deaths between the ages of 20 and 25 years and 2.6 per cent. of deaths between 20 and 30 years; 15.5 per cent. were from tuberculosis between 20 and 25; 30.3 per cent. between 20 and 30 years, and 50 per cent. between 23½ and 44 years; 4.9 per cent. of all male deaths were from this cause. The male deaths dominated over the female, in whom over 3.8 per cent. of all deaths were from tuberculosis. The greatest number of male deaths was found between the ages of 25 and 29, of females between 20 and 24. In proportion to the living population the greatest number of deaths occurred between 55 and 64 years. He does not find it easy to settle on the actual relations of marriage with liability to death from tuberculosis. The real relation that he finds exists between tuberculosis and marriage is that the condition under consideration has a very marked tendency to postpone or prevent individuals so affected from marrying.

76. **Distribution of Tuberculosis.**—The localities specially affected by tuberculosis in Cleveland are noted by Osborn and Herrick, who find that certain districts show much greater mortality than others, these occurring mostly in the older parts of the city, near the manufacturing and railroad districts and in those occupied by the laboring classes. They think it is due to the unsanitary conditions in which these people work and live; their ignorance or indifference to minor ailments, especially the early signs of tuberculosis. They do not find any considerable number of house infections.

Physician and Surgeon, Detroit, Mich.

November, 1902.

77½ *The Iliac Segment of the Ureter. Byron Robinson.
78 *Joys and Sorrows of an X-ray Worker. Henry Hulst.
79 *The Therapeutic Value of Echinacea in Septic Conditions. Frank D. Walsh.

77½. **The Anatomy of the Ureter.**—Robinson's article is an elaborately detailed anatomic description.

78. **The X-Ray.**—Hulst gives his experience with the use of the *x* rays. He has found the induction coil most satisfactory to him for instantaneous work, and he points out the importance of the operator doing all his work, even to the development of his plates, to get the best results.

79. **Echinacea.**—This drug is recommended by Walsh as a valuable remedy for blood deprivation and an active antagonist to septic changes. He has found it of value in puerperal septicemia and other septic conditions, in gangrene of the lung, etc. There are two preparations, the normal tincture and the "echafolta," the latter being the name given to a purified form of echinacea of a definite strength.

Proceedings of the Philadelphia County Medical Society.

January 31.

SYMPOSIUM ON LEPROSY.

80 A Case of Tubercular Leprosy. J. V. Shoemaker.
81 The Lepra Bacillus in the Circulating Blood. L. Napoleon Boston.
82 Observations on Leprosy occurring in Japan, Iceland and Norway. Judson Daland.
83 *Mouth Infection Due to Natural Teeth. D. D. Smith.

83. **Mouth Infection.**—Smith notices the particular increase of dental disease, which, he thinks, has much to do with the general health. The kidneys, he holds, are specially affected in pyorrhea, and he says that every mouth with teeth in the natural state untreated is constantly breathing out infection. The contention, therefore, over the surgeon's beard seems puerile. It would be better for antiseptic purposes if it was an absolutely complete mouth mask. He finds from his experimental work that caries is the result of environmental conditions. His method of treatment is complete removal of all concretions, calcic deposits, semisolids, bacterial placques or inspissations of the teeth between them and the gum margin, and frequent polishing of the teeth by hand methods; not alone the more exposed labial and buccal surfaces, but the lingual, palatal and proximal surfaces, as well, of the mouth are thus treated. With this "mouthly prophylaxis" he has been able to stop decay and finds decided benefit in many conditions, such as general malaise, nervousness, nervous prostration, nervous dyspepsia, etc.

Colorado Medical Journal, Denver.

November, 1902.

84 *Delusions; Insane and Sane. Bernard Oettinger.
85 Fibroid of Right Broad Ligament. Edwin B. Shaw.
86 *The Influence of Biliary Acids on Surface Tension. C. D. Spivak.
87 The Cesarean Section, with Report of Three Cases. T. Mitchell Burns.

84.—See abstract in THE JOURNAL, XXXIX, p. 329.

86. **Biliary Acids.**—Spivak discusses the Hay test for bile acids in the urine, giving its history. He has applied this test to the study of bile acids in the feces and stomach contents. The more he studies it the more striking it seems. A pinch of flowers of sulphur thrown on water or bile-free urine will float for weeks on the surface. On the addition, however, of one drop of bile to a quart of water, it will at once sink to the bottom. The test is so different in its nature from all other known means of analysis and so extreme in its sensitiveness that it is almost miraculous. Acetic acid, alcohol, ether, chloroform, essence of turpentine, benzoin and its derivatives, phenol and its derivatives, and anilin also cause the sulphur to precipitate. All fluids with a surface tension above 50 dynes per centimeter do not allow sulphur to fall, and in all fluids with a tension less than 50 dynes the sulphur rapidly settles. Lycopodium has the same relation to fluids with a tension of 30 dynes as flowers of sulphur to fluids with a tension of 50 dynes. In his own experiments he has noted that the specific gravity of the fluid has no influence on the accuracy of the test, nor has the reaction of the fluid any effect on the test. The fluid must be clear for correct results and the urine free from bubbles. Urine examined immediately after it is voided gives, invariably, the reaction for bile. This annoyed him until he found that heat reduced surface tension, and it must, therefore, be cooled off. His experiments have not yet warranted him to make positive assertions, but he wishes to call attention to this test for bile acids, which, with its simplicity, accuracy, and sensitiveness, should have universal application.

Medical Fortnightly, St. Louis.

February 10.

88 Enucleation of an Atrophic Eye, with Implantation of a Glass Globe into the Orbital Cavity—Reattachment of the Recti Muscles in Original Positions. J. E. Jennings.
89 Report of Cases Treated with Roentgen Rays. (Continued.) Wm. Allen Pusey.
90 Diseases of the Lungs and Pleura. (Gangrene of the Lungs.) Albert Abrams.

Virginia Medical Semi-Monthly, Richmond.

February 13.

91 Morbid Processes Compared with Sanitary Measures. J. McFadden Gaston.
92 The Causes and Treatment of Hydronephrosis. J. Wesley Bovee.

American Practitioner and News, Louisville.

December 1, 1902.

93 On the Prevention of Infectious Diseases. (Concluded.) E. J. Kemp.
94 The Most Practical Organization for the Medical Department of the United States Army in Active Service. (Continued.) Thomas Page Grant.
95 Hay Fever, Its Etiology and Treatment. Benjamin L. W. Floyd.

Medical Mirror, St. Louis.

February.

96 Medicine. D. R. St. John Roosa.
97 Scabies. Thomas C. Leitch.
98 A Case of Exhibitionism. William L. Robins.
99 A Successful Treatment of Rheumatism. H. H. Fletcher.
100 Memorial Address on Abel Mix Phelps. F. Van Fleet.
101 Some Points in Ligation of Arteries. Robert H. M. Dawbarn.
102 The Unclean Cigar-Cutter. C. L. Steenson.

Fort Wayne Medical Journal-Magazine.

February.

103 Diseases Produced through the Rectal Reflexes. L. R. Fast.
104 The Pathology and Treatment of Senile Pneumonia. E. W. Knepper.

Western Medical Review, Lincoln, Neb.

February 16.

105 Circulatory Changes a Factor in Kidney Disease. W. R. Lavender.
106 Suggestion and Autosuggestion. G. W. Shilder.
107 Inanition Fever in the Newly-born Child. F. A. Butler.
108 Management of the Lying-in Room. A. J. Clark.
109 Intranasal Sarcoma—Report of Three Cases. G. H. Bicknell.
110 The Best Suture in the Repair of Hernia. H. P. Hamilton.
111 My First Year's Work in Abdominal Surgery. H. H. Everett.
112 Operations on the Kidneys and for Ovarian Cyst. William F. Conwell.

Journal of Eye, Ear and Throat Diseases, Baltimore.

January-February.

113 Complete Aniridia with Posterior Polar Cataracts, Complicated by High Myopia and Buphthalmos. Report of a Case. H. O. Reik.

Oklahoma Medical News-Journal, Oklahoma City.

February.

114 Acute Appendicitis and Its Treatment. (To be continued.) John B. Deaver.
115 Some of the Principles which Should Govern Us in Fracture Therapy. Thomas H. Manley.
116 Vaselin Versus Hard Paraffin in Plastic Surgery. Dexter D. Ashley.
117 Infant Feeding. C. R. Day.
118 Cerebrospinal Meningitis. Harry A. Reese.
119 Dysentery. Walter Penquite.

Medical and Surgical Monitor, Indianapolis.

February 15.

120 Report of a Case of Operation for Chronic Bright's Disease by Decapsulation of the Kidney. J. A. Sutcliffe.
121 Stab Wound of the Chest—Operation for "Posterior Vertebral Disease." Joseph R. Eastman.
122 The Drug Treatment of Articular Rheumatism in the Adult. A. S. Jaeger.
123 Some Elements to be Considered in Urinalysis—Color, Specific Gravity, Reaction, Odor. (To be continued.) J. W. Crismond.
124 Hydrotherapy and Its Rational Basis. J. H. Nehrbas.
125 A Case of Syphilis Precox. N. E. Aronstam.
126 Luxatio Erecta—Case Report. William Osenbach.

Dominion Medical Monthly, Toronto.

February.

127 Some Scientific and Practical Aspects of Vaccination. P. H. Bryce.
128 Hepatic Ballottement in Physical Diagnosis. A. L. Benedict.
129 Gynecologic Cases Operated on at the Samaritan and Western Hospitals. A. Lapthorn Smith.
130 Section of the Eye: A Substitute for Enucleation. Ernest A. Hall.
131 Brief Notes on Some Interesting Cases of Skin Disease. Graham Chambers.

Vermont Medical Monthly, Burlington.

January 25.

132 Etiology and Pathology of Lobar Pneumonia. F. E. Clark.
133 The Symptoms and Diagnosis of Pneumonia. W. G. Church.
134 Complications and Sequelæ of Pneumonia. Geo. D. Parkhurst.
135 Active Principles in the Treatment of Disease. E. S. Weston.

Pacific Medical Journal, San Francisco.

February.

136 A Case of Complete Absence of the Vagina. Winslow Anderson.
137 The Nature and Treatment of Obstinate Vomiting. Alfred W. Perry.
138 Hip-joint Amputation under Medullary Narcosis. A. W. Morton.
139 Masturbation in the Female. E. H. Smith.
140 The Ideals of Preventive Medicine. (To be continued.) Victor G. Vecki.

Medical Examiner and Practitioner, New York.

February.

141 Some Observations on Medical Examinations. Daniel R. Brower.
142 Cutaneous Affections in Relation to Life Insurance Examinations. Joseph Zeisler.
143 Life Insurance Urinalysis, Its Importance, Its Present Extent, and How Its Scope Can Best Be Broadened. J. Allen Patton.
144 Symptomatology, Diagnosis and Prognosis in Stenotic Obstruction of the Large Intestine. Thomas H. Manley.
145 The Importance of Hyaline Casts in the Diagnosis and Prognosis of Renal Diseases. A. R. Defendorf.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

February 21.

1 *Adenoma and Adeno-carcinoma of the Rectum. Charles B. Ball.
2 The Conditions Which Modify the Characters of Inflammations of the Skin, and Their Influence on Treatment. H. Radcliffe Crocker.
3 *The Bacteriologic Diagnosis of Sewage Pollution of Shellfish. E. Klein.
4 A Note on Bossi's Dilator in Eclampsia. J. W. Ballantyne.
5 *Is Rupture of the Aortic Valve an Accident Under the Workmen's Compensation Act? Theodore Fisher.
6 A Note on the Therapeutic Value of Adrenalin. J. Gray Duncanson.
7 *A Note on Some Further Uses for Picric Acid. F. Victor Milward.
8 Manson's Trocar and Cannula for the Treatment of Liver Abscess. Alexander Turnbull.

1. Adenoids of the Rectum.—Ball's first lecture describes simple, multiple and congenital adenoma. By the word adenoma, we understand a tumor largely composed of epithelial tissue such as found in the gland structure. If it is a simple surface development, we speak of it as simple adenoma. If it grows through the basement membrane, invades the submucosa and infiltrates the tissue outside, the case is one of infiltrated adenoma or adenocarcinoma, the true form of intestinal cancer. This penetration of the submucosa is a characteristic distinction between the malignant and benign forms of the growth. First the adenoma appears as a wart-like congestion on the mucous membrane, which soon becomes more and more prominent while its base is narrowed to a peduncle, which tends to elongate so that it may project into the anus. These are sometimes single, but often multiple, and they cover extensive tracts of the mucous membrane. In this connection Ball mentions the congenital type, for which he favors the theory of its origin as failure of complete obliteration in one or other of the neurenteric canal or post-anal gut. The surgical treatment of these cases of embryonic adenomata, except when very small and extrapelvic, is not satisfactory. Symptoms of simple adenoma of the rectum are trivial unless the growth becomes protruded through the anus and becomes congested, causing bleeding. Another symptom is the discharge of glairy mucus, causing considerable discomfort and showing that the tissue still remains functional. Sometimes they undergo spontaneous cure, the pedicle sloughing off. The treatment consists in removal of the pedunculated forms after ligature of the pedicle and, when this is at all broad and strap-like, it is a good plan to transfix and ligature it in sections; the sessile varieties, especially if there is any tendency to infiltration, are best excised. When a considerable area is covered by villous growths they may be removed by the curette as are venereal warts.

3. Shellfish Pollution.—Klein describes at length the different types of bacterial pollution of shellfish, and he thinks that the mere chance of pollution may be considered unimportant,

but when the oysters are laid down where they are actually flooded by crude sewage in their immediate neighborhood, the danger is considerable. Oysters, moreover, even when they imbibe the *Bacillus typhosus*, discard it again when placed in clean sea water after ten or fourteen days, while cockles retain it, and even become a culture ground for it. The three forms especially noted are the *Bacillus coli*, the *Bacillus enteritidis*, and the *Bacillus typhosus*. The characteristic distinctions of the three groups are noted. Though there are many other of the colon group which may appear, their relation to sewage and pollution is not sufficiently known and, therefore, they can not be used for diagnostic purposes as can the *Bacillus coli*. The tests of the colon or the Gärtner or the typhosus group must be made to prove that they are characteristic of one or the other of these. When a microbe can only be described as a coli-like microbe, it is of indeterminate value in making a definite diagnosis of sewage and other pollution. The presence of *Bacillus coli communis* in any material quantity is highly suggestive of sewage or excremental pollution. The typical *Bacillus coli* is not a natural inhabitant of the oyster. The methods of the tests are described. Klein also holds that the presence of spores of the *Bacillus (enteritidis) sporogenes* alone, without the simultaneous presence of *Bacillus coli communis*, can not be held as sufficient proof that the oysters have been subjected to recent sewage pollution, but when they are found together the evidence is strong.

5. **Rupture of the Aortic Valves.**—The question as to whether rupture of an aortic valve is an accident coming under the English workmen's compensation act is discussed by Fisher, who notices the facts as shown in the pathologic literature and concludes that disease of the aortic valves may be the result of untreated syphilis or some other infection, but, of whatever cause, it seems clear that rupture of the aortic valve segment is, in the majority of cases, the result of the same disease as that which produces aneurism of the aorta.

7. **Picric Acid.**—Milward finds picric acid specially useful in some minor conditions other than burns. In slight eczematous conditions with "weeping" surface and in slight traumatic abrasions it may be useful. It is not advisable to use it in active inflammation, as it may confine micro-organisms under the protective coating it produces. He mentions, among the affections where it is useful, paronychia affecting the roots of the nails, common in surgeons and practitioners, ingrowing toe nails, soft corns, intertrigo, etc. It is better than starch and zinc oxid for those conditions, as these latter are likely to form crusts in which pus may form. It does not seem to cause irritation of the tissues like other antiseptics.

The Lancet, London.

February 21.

9 *The Conditions Which Modify the Characters of Inflammations of the Skin, and Their Influence on Treatment. H. Radcliffe Crocker.
10 *Fibroids of the Uterus and Its Ligaments Considered from a Clinical and Surgical Standpoint. Alban H. G. Doran.
11 *Some Thoughts and Observations Regarding Appendicitis, Especially When Appearing in Its Acutest Forms. J. A. MacDougall.
12 *The History of the Discovery of Trypanosomes in Man. Robert W. Boyce, Ronald Ross and Charles S. Sherrington.
13 On the Permanent Care of the Feeble-Minded. Mrs. Ellen F. Pinsent.
14 Aneurism of the Ascending Arch of the Aorta in a Small Boy: A Postmortem Surprise. Alfred C. Jordan.
15 A Case of Hemophilia Illustrating the Value of Calcium Chlorid as a Local Styptic. T. Wilson Parry.

9. **Skin Inflammations.**—Crocker notices the various forms of dermatitis, those from irritation, various trade eczemas, etc. As to the question whether eczema is parasitic, a blood dyscrasia or a neurosis, no absolute answer can be given. But when the process is started, pus cocci, either staphylococcic or streptococcic, are present and do modify the form of inflammation and, in a large number of these cases, we should realize this fact, and consider whether we must not attack these organisms to successfully treat the condition. He mentions pemphigus—especially neonatorum, fungating papillary growths, and considers seborrhea at considerable length. In conclusion, he mentions the local origin of certain general eruptions, especially pityriasis rosea, which is not infrequent, but is not usually known except by the dermatologist. It generally consists first in a single patch, followed later by a widespread asymmetrical outbreak, which, after lasting for three or four weeks, gradually disappears. He has also seen similar local originations of psoriasis. The most feasible explanation is the invasion of the micro-organism from without and the local multiplication or, perhaps, the formation of toxins internally, with absorption into the circulation and generalization from within outward. We should attempt to treat the diseases in their beginnings, to prevent their later extension.

10. **Fibroids.**—In this third lecture, Doran begins with the management of capsules. Usually there is little need for trimming, as the tissue usually shrinks. Vessels have to be secured on the inner or parametric surface. As to the question whether they can be let alone or drained, there is some difference of opinion. He is inclined to hold that drainage is oftener necessary than some authorities would recognize when the capsule is deep. There are objections, but the practice is underrated at the present time, as it was formerly overrated and abused. He is not an enthusiast for it, but simply wishes to speak of its advisability in certain cases. Adhesions are rare in uterine fibroids, and seem to be sometimes connected with previous operative interference. He says it is important, however, to remember their infrequency. Small uterine adhesions in case of large ovarian cyst are a distinct source of danger. In case of dense adhesion of the ileum it is often better to resect an adherent piece of the intestine. Intestinal adhesions to malignant ovarian tumors are especially perilous, but they are rare in uterine fibroid disease. This fact should be considered in estimating the risks of hysterectomy. There is the possibility of adhesion of the extraperitoneal part of the large intestine to the surface of the tumor, which burrows under and behind the pelvic peritoneum, as in case of rectal adhesions. This is not always easy to recognize, and longitudinal bands may be taken for the ureter or may be taken for strands of fibrous tissue belonging to the tumor. After dividing the pelvic peritoneum, too rapid or rough use of the sponge or the finger may result in damage to the rectum, and that portion of the intestine has been known to be torn by too energetic pulling up of the tumor out of the pelvis. Parietal adhesions are very rare, for what appears to be such are more likely to be a direct connection between the abdominal parietes and the tumor. The fibroid burrows under the anterior layer of the mesometrium. Adhesions of fat omentum associated with a big omental epiplocele are very dangerous. The possibility of post-operative ileus and of rupture or hernia of the abdominal wound are considered and instances given. He thinks there are no reliable statistics on this subject, but that the more experienced operators have the least trouble. Still, no one can be sure of avoiding it. The possibility of cancer of the stump and the management of it is discussed at length. He notices, particularly, the discussion in the American Gynecological Society on the advantages of complete and partial hysterectomy as regards the retention of more or less of the stump of the cervix. He asks, may not any method of operating devised to maintain the nutrition of the stump favor the development of cancer, such, for example, as preservation of the ovaries, etc.; but admits we have not facts to answer this question. In conclusion he speaks of the danger of pushing a fibroid out of the pelvis, which is especially dangerous during pregnancy.

11. **Appendicitis.**—MacDougall first notices the comparative rarity of appendicitis in former years and its frequency at the present time, and gives statistical data in support of this latter assumption. He is inclined to consider the disease an increasing one, and its severity is becoming greater. The increased frequency of relapse is another point of interest. As a rule the acuter the initial symptoms the greater the gravity of the case. He lays special stress on the character of the pulse rather than its rapidity. A quick small pulse, with a high, or worse still, with a low temperature, should attract immediate attention and the pulse and the temperature should be closely watched. Sometimes a normal temperature with

quickening pulse may tell the true story. A pulse of 120 should be regarded as a very ominous sign. He also cautions against regarding the "period of repose" which may occur and may lead to serious error. It is possible to misread the phenomena that indicate lethal appendicitis, striking as they are. Colic of the appendix is one confusing condition, and he gives an instance. Renal and hepatic colic have proven sources of error, and intestinal obstruction may appear to be the condition when real ultra-acute appendicitis exists. Disease of the right adnexa is also noted here. The cecum itself may give cause to symptoms which we may credit to the appendix. He has no present knowledge of the simulation of lethal appendicitis by gastric or duodenal ulcer or twisting of the pedicle of an ovarian cyst, but records show how strong the counterfeit may be. Text-books say little about the difficulty of differentiating between appendicitis and typhoid fever, though it is a notable problem. A condition difficult of explanation yet not of recognition, occurring in many abdominal troubles, may, when appearing with the appendix as its exciting cause, lead us astray, that is peritonism. It is extraordinarily like peritonitis, and yet the importance and the gravity of the one are occasionally only mimicked by the other. The lack of tenderness of the swollen abdomen is one differentiating point, and often there is a certain quickness of pulse and rise of temperature; the freedom with which the patient moves and breathes and the expression of the face also suggest deception. A basal pleurisy or pneumonia involving, as they are apt to do, the pleural surface of the diaphragm, may lead to symptoms that suggest acute peritoneal inflammation. As regards treatment, he has not much to say. He thinks opium should be avoided, but it may be absolutely necessary. It is better given by suppository or rectal injection than as morphin subcutaneously. Enemas rather than aperients by the mouth should be used if needed. Early operation is safest. He would make an incision closer to the anterior superior spine of the ileum than is usually advised. It is quite possible to display and remove the appendix without any protrusion of the small intestine, and in cleansing and drainage of the inflammatory area and its surroundings he has more belief in the use of sponges and swabs than in irrigation, and in large sized drainage tubes with gauze wicks than in gauze packing. He bears testimony to the extreme value of normal saline solution subcutaneously in septic conditions.

12. **Trypanosoma in Man.**—Priority in the discovery of trypanosoma in man is discussed by Boyce, Ross and Sherrington, who conclude that, whatever the claims of others may be, it was certainly Dr. J. S. Dutton (Thompson-Yates Laboratory Reports, 1902) who first established the existence of trypanosomes in human beings in a thoroughly scientific manner.

Australasian Medical Gazette, Sydney.

January 20.

16 An Examination of Morphia Tablets—Are They Reliable? C. Reissmann.
17 The Incidence, Symptoms and Treatment of Strangulated Hernia in the Aged. Charles MacLaurin.
18 Hydroperitoneum in Pelvic Disease. Fourness Barrington.
19 A Case of Ruptured Uterus. W. B. Vance.
20 Notes on Anesthesia in Abdominal Surgery. F. J. T. Sawkins.
21 Notes on Two Cases of Death from Ether Anesthesia. Sydney Jamieson.
22 Angio-sarcoma of Thigh, Simulating Hip Disease. Leonard W. Bickle.

Intercolonial Medical Journal of Australasia, Melbourne.

January 20.

23 Presidential Address, Medical Society of Victoria. J. P. Ryan.
24 Achondroplasia. A. Jeffreys Wood and H. M. Hewlett.
25 Ulcer of the Stomach Near the Pylorus—Pylorectomy—Recovery. R. A. Stirling.

Annales de Dermatologie et de Syph., Paris.

26 (III, 12.) *Le traitement intense et précoce de la syphilis par les injections intraveineuses de sublimé. Tommasoli.
27 *Les purpuras et leurs modalités cliniques d'après leur formule sanguine. E. Lenoble.
28 Traitement local des syphilides ulcéreuses par l'application permanente de compresses imprégnées d'une solution de sublimé au 1/5000. Hallopeau.
29 *Le technique de la photothérapie à Copenhague. L'appareil de Finsen-Reyn. Leredde.
30 (IV, 1.) *Etude cytologique du liquide céphalo-rachidien (cerebrospinal fluid) chez les syphilitiques. P. Ravaut.
31 Porokératose papillomateuse palmaire et plantaire. C. Mantoux.
32 *Le traitement mercuriel intensif. Suppression des frictions mercurielles dans le traitement des syphilis graves. Leredde.

26. **Abortion of Syphilis by Intravenous Mercurial Injections.**—Tommasoli has been using the intravenous route during the last seven years for the abortion of syphilis, instead of using it as others have recommended, merely as a last resort. He has thus treated 44 patients, restricting this method of treatment to cases in which the initial syphiloma was diagnosed beyond question, and in which the infection had been contracted less than forty-five days previously. The longer the interval since infection the more energetic the treatment required. He commences with 6 to 8 mg. of sublimate and pushes it rapidly to 14, 16 or 18 mg., repeating the injections nearly every day, and supplementing them with the usual frictions, intramuscular injections of sublimate, calomel or pills of protoiodid, with brief intervals of suspension of all specific treatment or change to potassium iodid. The strictest hygiene of the mouth and frequent use of potassium chlorate, sodium borate and alum was always successful in curing the slight tendency to salivation observed in a few instances after the first injections. General weakness was occasionally noticed during the course of treatment, and this he combated by hygienic measures and administration of a tonic containing iron, arsenic, phosphorus, manganese and strychnin. Out of the total of 44 30 were completely cured of their syphilis, not a trace of secondary manifestations having been observed since. In 6 others he was equally successful, but was not able to follow the cases as long as he wished and consequently does not include them in his 30 cases of complete cure. The drawbacks of the method are the occasional painful lumps at the point of the injection, or slight suffusion of blood, phlebitis, subcutaneous edema or erythem. None of these local inconveniences were serious, and they were all due to imperfect technic, not to the method, and are easily avoided. Another drawback is the metallic taste in the mouth and the salivation. Both were rare and not severe. No stomatitis was observed in any instance. Other drawbacks are a slight degree of general muscular weakness, slight headache, slight fever, very rarely, a general malaise and stomach troubles. None of these inconveniences were serious enough to require suspension of the treatment, and all soon vanished under appropriate accessory measures. No thrombosis, embolism or coagulation was noticed after any of the intravenous injections. His experience justifies the conclusions that intravenous injection of sublimate is harmless, even with the dose of 2 cg. Commenced promptly in the primary period and continued as energetically as possible, followed by a course of the ordinary mercurial treatment during several months, it will positively abort syphilis in a proportion of 80 per cent. of all cases. He describes the details of his 44 cases. Some received 15 injections, others 20, 23 in 37 days, or 32 in 43 days. The total of sublimate injected ranged from a few cg. to 17; 28.1 and 31.6 cg. The cases in which this intensive treatment failed illustrate the time limits for its effectiveness. In a young man of 19 the injections were commenced 31 days after infection. Twenty-five injections were made in 29 days, and then 8 more after a brief interval. The total injected was 210 mg. with an average of 6 mg. at each injection. Larger doses induced headache. No secondary manifestations have developed, although several years have elapsed, and no supplementary mercurial treatment was attempted in this case. The syphiloma usually vanished with the sixth to eighth injection.

27. **The Blood in Purpura.**—Lenoble asserts that purpura is a myeloid affection, distinguished by the absence of retraction of the clot and of transudation of serum, by the constant myeloid reaction, sometimes intense, characterized by the profound changes in the hematoblasts, which are diminished in number but increased in size, with a more or less complete loss of specific spontaneous alterability, and of their tendency to cling together. The majority are precipitated. Thus is explained the absence of retraction of the clot, the special anemia and the profuse hemorrhages characteristic of this affection, which he calls the disease of the bone marrow *par excellence*. It resembles myelogenic leukemia and also pernicious anemia,

but differs from them as all the blood-forming organs are involved in them. Every petechial eruption, with or without hemorrhagic manifestations, is true purpura when the formula of the blood is of the above character. Every purpuric exanthem, with or without hemorrhagic manifestations, but with normally constituted blood, is an affection extraneous to the blood-forming organs. The attenuated myelocytic reaction is not alone specific, but becomes so when accompanied by a normoblastic reaction, however slight.

29. **Technic of Phototherapy.**—Leredde extols the exalted scientific conscientiousness which distinguishes all of Finsen's writings. He has recently visited Copenhagen and announces that Finsen has now thoroughly established that the intensity of the superficial reactions is no criterion of the deep reactions. Comparative tests of the penetrating power of the various lamps employed in phototherapy, show that all are far inferior to Finsen's apparatus, although theoretically improvements on it. The tests are made with a plate of photographic paper on which are placed the superposed ears of rabbits. Through two rabbit ears the Finsen apparatus affects the paper in 5 seconds, the Lortet and Genoud apparatus in 20, while the Bang lamp requires 5 minutes to produce the same effect. Through 3 rabbit ears the Finsen requires 20 seconds and the Lortet apparatus 4 minutes. Through 4 ears the Finsen requires 2 minutes, while the Lortet apparatus fails to affect the paper at any time. The consequences of these tests are extremely important. They show that phototherapy requires foci concentrating on a limited spot a large quantity of violet rays, that is, great luminous intensity. Finsen and Reyn have constructed a lamp for application of the light treatment to a single patient. The lamp regulates itself automatically; has a force of 20 amperes and 55 volts and requires a direct and continuous 100-volt current.

30. **Cytodiagnostic of Syphilis.**—Ravaut has found that the cerebrospinal fluid is liable to contain cellular elements, reflecting the intensity of the reactions in the meninges which have been noted in syphilitic affections of the nervous system. In many cases the cerebrospinal fluid disclosed the presence of the cellular elements long before any clinical manifestations were apparent. This allowed energetic mercurial treatment to be instituted, which warded off the impending serious complication. They are more numerous in the fluid when the lesion is in its early stage, and become attenuated as they become cicatrized.

32. **Intensive Mercurial Treatment.**—Leredde proclaims that we have no reason for continuing to cling to mercurial frictions in the treatment of syphilis. Before the introduction of insoluble injections they were the best means known and were generally more active than mercury by the gastric route. But now they should be abandoned without regret. The only means of knowing the exact amount of mercury we are introducing into the system is by injecting it. Injections are to-day the only mode of mercurial treatment which allows us to realize what may be called an intensive mercurial treatment. There need be no fear of stomatitis if the mouth has been put in perfect order. The dose for an adult man, free from any special susceptibility to mercury or renal trouble, may be .02 to .035 of mercury daily, in the form of the benzoate or biniodid. By careful supervision of temperature, weight, digestive tract and the urine, it is soon possible to determine the largest dose that can be taken without disturbance. The dose of .02 was always well tolerated by his adult patients, and he accepts this as the minimum amount for intensive treatment, but it must be individualized for each patient.

Berliner Klin. Wochenschrift, Berlin.

33 (XL, 1.) Operation ohne directen Gebrauch der Finger (without direct use of fingers). König.
34 Untersuchungen über die Durchgangigkeit der jugendlichen Magen-Darmwand (permeability of wall of youthful gastro-intestinal canal). Disse.
35 *Ueber Syphilis-Immunität, besonders in Hinsicht auf die sogen. Profeta'schen Gesetz (law). Von Düring.
36 Tuberculöse Kehlkopfgeschwülste (laryngeal tumors). L. Neufeld.
37 Zur Symptomatologie und Therapie der perforativen Peritonitis bei Ulcus ventriculi. F. Weber.
38 *Ueber Antistreptokokken-Serum bei Scharlach (in scarlet fever). P. Moser.
39 *Ibid. A. Baginsky.
40 *Ibid. H. Aronson.
41 (No. 2.) *Ueber die Wirkung des Sauerstoffs (action of oxygen) auf die osmotische Spannung (tension) des Blutes. A. Loewy.
42 *Untersuchungen über die im Rachen befindlichen Eingangspforten (research in regard to portals of entry in throat) der Tuberculose. S. Ito.
43 Ueber den Milch-Sterilisirungs-Apparat von Dr. E. Kobrak (Disadvantages of). L. Natanson.
44 (No. 3.) Familiäres Vorkommen congen. Herzfehler (heart defects), zugleich ein Beitrag zur Diagnose der Persistens des Ductus arteriosus Botalli. de la Camp.
45 Ueber Quecksilber-Bindung (binding of mercury) im Urin. A. Laqueur.
46 Ueber Harnröhrenfistel und Krebs (urethral fistula and cancer). L. Lipman-Wulf.
47 (No. 4.) Zur Etiologie osteoarthropathischer Veränderungen (changes). W. Berent.
48 *Ueber den Alcohol als Arzneimittel (in therapeutics) gemäss den Ergebnissen der Forschungen des letzten Jahrzehnts (by light of latest researches). C. Binz. (Commenced in No. 3.)
49 Zur Kenntniss der Cobra-Gift (venom) activirenden Substanzen. P. Kyes and H. Sachs.
50 (No. 5.) *Ueber den Werth der otitischen Symptome zur Diagnose von Kopfverletzungen (injuries of head), bezw. Basis-Fractur. Stenger.
51 Casuistische Beiträge zur Kenntniss der "Tabes incipiens." G. Flatau.
52 Der Kampf gegen die Tuberculose als Volkskrankheit (campaign against Tub. as a disease of the masses). J. Katz.
53 Ueber atypische Typhen (typhoid). C. A. Ewald. (Commenced in No. 4.)
54 (No. 6.) Rigiditas dorsalis myopathica. H. Senator.
55 Ueber Akkoodations-Lähmungen (paralyses). J. Heibron.
56 Beiträge zur conservat. Chirurgie. M. Katzenstein.
57 *Theoretisches und Praktisches über lokale Wärmeapplication. H. Davidsohn.

35. **Non-Existence of Inherited Immunity to Syphilis.**—In his extensive experience in Asia Minor, where syphilis is almost endemic, Von Düring has become more and more firmly convinced that the descendants of syphilitics are entirely lacking in any special resistance to fresh infection, but acquire it like other persons free from any hereditary taint. He mentions as an instance that in a certain secluded village 110 of the 160 inhabitants had syphilis, and 30 children, including 25 between 7 and 12 years old, bore evidences of recently-acquired syphilis. The disease was introduced into this region early in the last century, and as 30 to 200 on an average in each village are syphilitic, the third and fourth generation would certainly exhibit some degree of immunity if such a thing as an inherited immunity were possible. But the children in these families acquire syphilis the same as the children in other families free from syphilitic antecedents.

38-40. **Serum Treatment of Scarlet Fever.**—These articles are claims for priority in certain discoveries in regard to serum treatment of scarlet fever, Baginsky maintaining Aronson's claims against Moser.

41. **Action of Oxygen on Osmotic Tension.**—Loewy found in his tests that the freezing-point of the blood has a tendency to rise on inhalation of oxygen. This he establishes is not due directly to the oxygen, but is merely the result of the deeper breathing induced by the inhalations. The better ventilation of the lungs, therefore, is the main factor in the benefit derived from inhalation of oxygen, in his opinion.

42. **Entering Points for Tuberculosis in the Throat.**—Ito examined under the microscope the tonsils, uvula, etc., of 104 cadavers. Not a single case of certain primary tuberculosis was found among them, and secondary lesions were noted in only 6.

48. **Alcohol in Therapeutics.**—Binz asserts that the growing tendency to refrain from the use of alcohol in therapeutics costs the life of many a patient who might have been saved by the judicious administration of some good alcoholicum in threatening collapse or inanition. Clinical experience harmonizes in every point with the results of the later scientific researches on the subject.

50. **Otitic Symptoms in Case of Injuries of Head.**—Stenger's experience has demonstrated that if functional tests of the hearing result positively, they afford reliable evidence as to the severity of the traumatic injury and exclude simulation. A peripheral trauma may affect the cerebrum, but the symptoms differ from those observed in case of concussion of the brain with simultaneous injury of the organ of hearing.

57. **Local Application of Heat.**—Davidsohn reiterates his former announcements as to the extreme practical value of his method of applying constant heat. It is free from the disadvantages of other methods; the appliance is light, convenient and answers every requirement. The principle of the appliance is merely a coil of narrow, rather stiff rubber tubing through which a constant stream of hot water is passed from a receptacle over a spirit lamp. When the tubes are once full the faucet is turned so that only a drop flows out at a time, thus economizing the hot water. One convenient form is a square cloth on which the rubber tubing winds back and forth two or three times, one end of the tube extending to the receptacle and the other reaching down to a vessel under the bed. When heat is to be applied to the entire body the tubing winds back and forth a number of times in the outline of a human body. The two tubes entering from the boiler separate into two branches each, thus equalizing the heat for the four members and trunk.

Deutsches Archiv f. Klin. Medicin, Leipsic.

58 (LXXV, 1-2.) *Ueber Blutveränderungen durch Syphilis und Quecksilber (blood changes in syphilis), mit bes. Berücksichtigung ihrer diagnostischen Verwerthung. J. Justus.

59 *Blutuntersuchungen (study of blood) bei ulcerösen und gummösen Formen der Syphilis mit bes. Berücksichtigung des Eisengehaltes (proportion of iron). G. Löwenbach and M. Oppenheim.

60 *Ueber aquirirte combinirte Strangsclerosis (sclerosis of tracts of white matter in cord). W. Kattwinkel.

61 *Zur Kenntniss der Streptothrix-Pyaemie. G. Engelhardt and M. Löhlein.

62 Ueber artificielle Haut- (skin) Gangrän. A. Gross.

58. **Blood Changes in Syphilis.**—In this article Justus reviews the various communications that have been published on the "Justus blood test" and states that his own experience now includes 22 cases. In his latest series of 10 cases in which the syphilis was dubious, the characteristic decline in the hemoglobin after administration of mercury, which is the essence of his test, was confirmed by the rapid recovery under specific treatment. In all the publications on the subject he knows of only two experimenters, Brown and Dale, who obtained negative results in undoubted syphilis. But he points out that these writers administered only 20 grains of mercury, which is too small a dose to induce the characteristic reaction. It subsides the second to fourth day after adequate mercurial treatment has been instituted.

59. **The Blood in Late Syphilis.**—These writers establish that both hemoglobin and the proportion of iron are materially diminished in the later phases of syphilis and also in the maligna precox form. The findings of both ferrometer and hemamometer harmonize. The red corpuscles range within normal limits.

60. **Sclerosis of Tracts of White Matter.**—Kattwinkel describes the clinical history and autopsy findings in 8 cases of acquired sclerosis of these various tracts combined. In most cases there was a paralytic enfeeblement of the lower and in one instance also of the upper limbs, besides the ataxia. It amounted to complete paraplegia in 2. Nothing abnormal was noted in the brain except possibly a slight tendency to thickening of the meninges and edema, with a scarcely appreciable atrophy of the cortex. Externally the cord appeared to be intact, but transverse sections revealed extensive degeneration of both the longitudinal and the endogenic fibers. In the upper portion of the cord the degeneration involved the posterior columns, the lateral pyramidal fasciculus, and the cerebellar and Gowers' columns with small scattered foci in the anterior columns. The degeneration could be traced with the Weigert to the medulla oblongata and with the Marchi into the pons. The lesions were most pronounced in the dorsal region, and diminished below until the pyramidal tracts were the only ones affected in the lumbar region. Close study of the findings under the microscope clearly demonstrates that the lesions originated in some affection of the local lymphatic system. In every case signs of a morbid process in the lymphatics were prominent. The lymph-spaces were much dilated, the central canal enlarged and choked with cellular elements. Thickening of the adventitia of the vessels was frequently observed, with obliteration of the lymph-clefts in the adventitia and occlusion of the epispinal lymph-spaces from the almost invariable thickening of the pia and its adhesion to the spinal cord. The lymph stream had evidently been checked and stagnation ensued.

61. **Streptothrix Pyemia.**—In the case described peculiar fungous filamentous threads were disclosed by the Gram in the pus of abscesses in all the organs examined as well as in the single vessels. No other micro-organisms were discovered. The patient was a previously healthy young man. Four months before entering the hospital he complained of loss of vitality and appetite, with fever. During the last week there had been pain in the right side, with cough and expectoration. He died a month later and metastatic abscesses were found in all the vital organs, containing the fungous growths above mentioned.

Deutsche Med. Wochenschrift, Berlin and Leipsic.

63 (No. 5.) Fall von echte (genuine) Hermaphroditismus. Garré.

64 Mechanismus der Strangulation des Darmes (of intestine). Wilms.

65 Weitere Untersuchungen über Mitigation des Epithelioma contagiosum des Geflügels (of fowls). E. Marx and A. Sticker.

66 *Ueber ein für menschliche (human) Placenta specifisches Serum. W. Liepmann.

67 Zur Symptomatologie der akuten Entzündungs- (inflammation) Prozesse des Gehör (hearing) Organs. A. Eiteiberg.

68 Die Thränenschlauchcitterungen (suppuration in lachrymal duct) Neonatorum. E. A. Heimann.

69 Discussion of Suggestion of "Cancer Stations." L. Hirsch and I. Boas.

70 (No. 6.) Erfahrungen (experiences) mit der Perkussion der Lungen-Spitzen (apices) nach Krönig. A. Wolff.

71 *Zur Aetiologie der Dysenterie. L. Rosenthal.

72 Ueber eine bei Syphilitischen vorkommenden Quecksilber- (mercury) Reaction. Rille.

73 *Diabetes mellitus und gynäkologische Operationen. H. Füth.

74 Ueber den Einfluss (influence) der Rachenmandel- (tonsil) Hyperplasie auf die körperliche und geistige Entwickelung der Kinder (on development of children). Wilbert.

75 *Zur Kasuistik der intravenösen Collargol-Behandlung septischer Prozesse. Jaenicke.

76 Fall von Lymph-Extravasat nach subkutaner Contusion des Oberschenkels (of thigh). C. Schindler.

77 *Zur Etymologie des Wortes Gelbsucht (jaundice) und der dafür gebräuchlichen Synonyme. W. Ebstein.

78 *Der Schutz (prophylaxis) vor Lungentuberkulose in Kurorten (health resorts) und in offenen Kuranstalten (public sanatoria). T. Büdingen.

79 *Die Behandlung der progressiven Paralyse sowie toxischer und infektiöser Psychosen mit Salz-Infusion. J. Donath.

80 Behandlung des nachfolgenden Kopfes (of following head). Rühl.

66. **Specific Serum for Human Placenta.**—Liepmann's success in producing a biologic serum by injection of scraps of human placentæ, was proclaimed in No. 51 of the *Wochenschrift*, last December. He now announces that it is possible by this means to determine the presence of particles of the placenta in the blood of pregnant women as well as in the serum from the umbilical cord of the fetus. The reaction is the same as in the biologic blood test. No reaction was observed in blood from male subjects or from non-pregnant women.

71. **Etiology of Dysentery.**—Rosenthal's communication describes an epidemic of 85 cases of dysentery at Moscow induced by the Shiga-Kruse dysentery bacillus. In one case the bacilli had caused general septicemia. Pure cultures were derived from the spleen and mesenteric glands and in the excreta these bacilli were in the overwhelming majority. The bacilli remained alive in the stools for eight days at room temperature and for eleven at the freezing point. On fruits and vegetables they also remained alive for seven or eight days, and on water melon for eleven.

73. **Diabetes Mellitus and Gynecologic Operations.**—Füth has witnessed three deaths in diabetic coma, the seventh, eighth and fifth day in 3 cases of operation for cancer of the uterus in diabetics. Becker has also warned of the dangers of narcosis in diabetics and collected 9 fatal cases. Füth concludes that surgical intervention on diabetics must be surrounded with exceptional precautions. In the first place, the sugar must be banished from the urine before attempting to operate. Strict diabetic diet may be enforced, with prophylactic administration of sodium bicarbonate (Naunyn) or sodium citrate (Rumpf). The patient must also be brought into a tranquil state of mind. Purges and enemata must be avoided for fear of inducing weakness, and the supply of fluids must not be allowed to fall below the average. One enema should be

given the night before the operation, and the latter should be done in the early forenoon in the period of physiologic hunger and thirst. The entire operation should be done without general narcosis. A laparotomy should be commenced with local anesthesia and continued without narcosis as long as possible, as suggested by Veit. Spinal cocainization may find its most useful application in these cases. As soon as the intervention is completed, fluids should be supplied as abundantly as possible by the rectum. As soon as any way practicable the patient should be given easily-digested solid food, with prophylactic administration of sodium citrate. When the recovery is progressing normally the physical exercise, so indispensable for diabetics, should be substituted by massage. In 6 or 47 per cent. of the 14 gynecologic operations on record, the patients died in diabetic coma after a period of well-being. Hirschberg also lost a patient from the same cause after a brief operation on a cataract under cocain. In his second similar case the patient finally recovered. Füth's article is an elaborate review of all experiences in Germany to date.

75. **Collargol in Septic Processes.**—Jaenicke remarks that it requires considerable courage to inject into the veins of an emaciated, fever-ridden, extremely sick woman, the inky, turbid fluid of a 1 per cent. sterilized solution of Credé's collargol. But in the case of septic parametritis which he describes the effect was most remarkable. In thirty-six hours the patient was entirely free from fever, and would undoubtedly have had no further temperature had it not been for the development of venous thrombosis in the left leg, which threatened trouble, but soon vanished harmlessly. An exudate producing a tumor as large as the head of a child subsided spontaneously in four and one-half days. The dose injected in the vein at the elbow was only 8 c.c., but the arm was painful and helpless for a few days.

77. **Origin of Terms Icterus, Jaundice, Etc.**—Ebstein quotes from ancient and medieval writings to show that it has been a custom from time immemorial to treat the "yellows," icterus, jaundice, etc., with yellow objects. The very word icterus denotes a yellow bird, which was tied to the bedside of the patient. This practice is mentioned in the Atharva Veda. The German word for bile, Galle, is derived from the Latin giallus, yellow. Jaundice originated in the French term for yellow, Jaune. Yellow roots, vegetables, saffron, etc., have been used in treatment and especially yellow birds.

78. **Prevention of Tuberculous Infection at Health Resorts.**—Büdingen emphasizes the danger of promiscuous intercourse and change of lodgings between consumptives and persons suffering from other affections of the upper air passages. He proposes several measures which he thinks would counteract this evil and might easily be enforced by the municipality at health resorts. In the first place, each householder should be visited and required to state whether he wishes to take tuberculous guests under his roof. If he replies in the affirmative then the house should be inspected by the authorities and a certificate delivered as to its suitability for persons suffering from tuberculosis. If passed on favorably, then the householder is entitled to receive tuberculous guests, but must reject those who are non-tuberculous. If a tuberculous person stops in a non-certified house, the attending physician must advise removal and notify the authorities in case of refusal, and the latter must attend to moving the patient within two days. Neglect to notify or to compel the removal of a tuberculous patient from a non-certified house or of a non-tuberculous patient from a house given up to tuberculous guests, should entail a fine on the physician or suspension of his practice. This latter point is important, as it relieves the physician of the responsibility of resisting the importunity of persons who may dislike some of the measures. If these precautions were enforced in health resorts there would be no danger of a non-tuberculous person occupying a room just vacated by a consumptive. The consumptives would be housed in rooms suitable for them, and non-resident physicians would feel much safer in sending their patients to a place where such regulations were enforced and could direct them to certain hotels, sanatoria or private houses. Guests at such places who cough or are otherwise suspicious of tuberculosis should be noticed by the physicians and urged to submit to an examination. In Baden there is already a decree compelling the attending physician to notify the authorities whenever a person in advanced tuberculosis changes his lodgings or is deemed a menace to his surroundings from any cause. Disinfection of rooms vacated by consumptives is also obligatory.

79. **Treatment of Toxic and Infectious Psychoses with Saline Infusion.**—Donath uses what he calls an artificial blood-salts solution, absolutely isotonic for the blood, and reports astonishingly favorable results from its infusion. One of his patients with progressive paralysis who had long been obliged to give up his business as a traveling man, was enabled to return to it, completely restored. In 4 others the improvement was also marked and permanent, but one of the 6 cases was not improved. He found it very effective also in a case each of cerebral syphilis, tetany and melancholia. The earlier the stage in which it is applied the better the results. Gaspero has recently reported the great benefits derived from saline infusion in various psychoses at Anton's clinic, in catatonia, amentia, stupor, delirium acutum, melancholia agitata, etc. The patients increased in weight and the mental disturbances were very favorably influenced. Donath's formula corresponds to the total ash of the blood, omitting the calcium and magnesium, which would be precipitated in such a solution. The blood corpuscles are not affected, even when left in it for twenty-four hours. It contains in 1000 gm. of distilled water, .25 gm. of potassium sulphate; 1 gm. of potassium chlorid; 6.75 gm. of sodium chlorid; .4 gm. of potassium carbonate, and 3.1 gm. of cryst. sodium phosph. The jar in which the mixture is kept is of glass and has three holes in the rubber stopper. In one of these holes a thermometer fits which reaches close to the bottom of the jar. In another hole fits a glass tube which also reaches close to the bottom of the jar and is bent at an acute angle, where it projects above the stopper. The rubber tube conveying the fluid is attached to its end. A short glass tube fits into the third hole. It reaches only a short distance above and below the stopper. The upper end is plugged with cotton, tied on with a piece of gauze and a rubber band. This supplies filtered air to the jar. The fluid is injected through a Dieulafoy aspirator, 500 to 1000 c.c. at a time, every three or four days. The jar is sterilized by being boiled in another vessel.

Therapeutische Monatshefte, Berlin.

81 (XVI, 1.) Luys' Urine-Separator. Garré.
82 *Zur Behandlung akuter Infektions-Krankheiten. J. Wernitz.
83 Serum-Behandlung bei Diphtherie. P. Helberg.
84 Ibid. Kassowitz.
85 Information in Regard to the Resort, Bad Brückenau. H. Neumann.—Einiges über Bad Brückenau, Insb. die Wernaser Quelle (spring).
86 Die gemeinschaftliche (common) Basis der verschiedenen Behandlungsweisen (modes of treating) der Lungen-Tuberculose. H. Weber.
87 Perdynamia. G. Siefert.
88 *Zur Verwendung von Arzneimitteln (application of medicines) im gas-formigen Aggregatzustände für Inhalations und Desinfections-Zwecke. M. Saenger.
89 Zur vaginalen Mastdarmausschneidung (extirpation of rectum). J. Prochnow.
90 Pyranum als Antineuralgicum. E. Schlesinger.
91 Helmitol, ein neues Harn-Desinficiens. Ibid.

82. **Treatment of Acute Infectious Diseases.**—In Wernitz's experience at Odessa he has derived inestimable benefit from copious rinsing out of the body with a saline solution. He does not introduce it subcutaneously on account of the inconveniences of this route, but merely keeps up an almost continual irrigation of the lower intestines according to the method suggested by Hegar. The effect is even more pronounced than that of subcutaneous injections. Diuresis is remarkably promoted, while the patient does not experience thirst. The fluid is supplied in abundance, and the system can absorb as much or as little as it requires. In saline infusion the system has to take the amount that is introduced, irrespective of its actual needs. By the intestinal route the heart is never over-burdened. He uses a tepid 1 per cent. salt solution, with a moderately long rectal tube. The receptacle for the water is placed beside the bed and raised sufficiently to allow the water to flow in very gently. If there is a desire for defecation the receptacle is lowered and the diluted alvine discharge flows

into it. The receptacle is then rinsed and filled with fresh saline fluid and the irrigation resumed. The injection must not disturb the patient in any way. The urine frequently amounts to 5 or 6 quarts in the twenty-four hours. He allows a quart of the saline solution to each injection, and prolongs the time to about an hour, interrupting the flow occasionally to avoid inducing peristalsis or desires. The injection is repeated every hour or two. If a peristaltic movement does occur it is not felt as a desire after the first. The fluid in the receptacle merely rises a little, showing that the pressure in the intestine is a little augmented. He describes some typical examples to illustrate the great benefit derived from the procedure, which he recommends as a notable improvement over infusion or any other method of supplying the necessary fluid to the organism in acute infectious diseases. He usually makes about ten injections in all.

88. **Inhalation and Disinfecting Apparatus.**—Saenger's apparatus is described and illustrated. Its chief advantage is that the spray is directed in a very powerful jet, which much facilitates the action of the disinfectant.

Zeitschrift f. Orthopaedische Chirurgie, Stuttgart.

92 (XI, 2.) *Ueber die unblutige operative Epiphyseolyse zur Behandlung des Genu valgum adolescentium. C. Reiner.
93 Ueber die statische Verhältnisse des Oberschenkelknochens (static relations of femur). C. Ghillini and S. Canevazzi.
94 Noch einmal die Zuppinger'sche Skoliosentheorie. H. Zuppinger.
95 *Zur orthopadisch-chirurgischen Behandlung der schlaffen Lähmungen (lax paralysis) der unteren Extremitäten (legs). A. Möller.
96 Ueber Unterschiede (variations) in der Form der Skoliosen bei Männlichen und Weiblichen Individuen (in male and female individuals). A. Sutter.
97 Zur Casuistik der beiderseitigen (bilateral) congenit. Schulterblatt-hochstandes (elevation of scapula). H. Mohr.
98 *Study of Anatomic Processes in Healing of Congenital Hip Dislocation After Bloodless Reposition. E. Müller.—Anat. Vorgänge bei der Heilung der angeb. Hüftluxation durch unblutige Reposition. Meine Resultate dieser Behandlung.
99 Zur Kenntniss der Skoliose bei Thieren (in animals). E. Schmidt.
100 *Troubles of the Middle and Front Portion of Foot and Their Treatment. K. Hasebroek.—Ueber Mittel-Vorderfussbeschwerden und deren Behandlung.
101 Zur Pathogenese der kindlichen Skoliose. C. Deutschländer.
102 Report of Orthopedic Institute at Dresden. A. Schanz.—Anstaltsbericht.
103 Fall von congenitaler Skoliose. H. Maass.
104 Ueber den "congenitalen" Schiefhals (torticollis). Ibid.
105 Fall von multiplen congenitalen Contracturen mit Muskel-Defecten. F. Magnus.

92. **Bloodless Epiphyseolysis for Genu Valgum.**—Reiner is assistant at Lorenz's Universitäts-Ambulatorium for orthopedic surgery at Vienna. He reviews the history and experiences of epiphyseolysis in the treatment of genu valgum adolescentium, and proclaims that it is by far the simplest, easiest and most rational method of overcoming this deformity. The epiphysis heals smoothly almost without exception, and without inflicting any permanent injury. Quite recently Codivilla published a series of 1,031 cases thus treated at Milan and Bologna, and the only complication observed in any case was paralysis of the peroneus nerve, which occurred in 34, but proved briefly transient in 32. It was permanent in only 2 instances, and was probably due to defective technic in applying the cast. The epiphysis had been detached smoothly as the radiograms showed, with or without circumscribed fracture of the diaphysis. The functions of the epiphysis were not disturbed in any way. Reiner restricts the intervention to subjects over 8 and under 17. Within these age limits he has been invariably successful. The apparatus which he uses screws like a vise to the operating table and holds the limb firm, while he works the leg as a lever. The resistance to be overcome is least at the epiphysis, and especially at the knee. The operation is done in profound narcosis. The construction of the apparatus can be seen from the cuts. An important point is the slope of 20 degrees from the horizontal, and also the groove large enough to admit the finger of the operator. The epiphysis is found 1 to 1.5 cm. above the greatest prominence of the inner condyle, and it is placed exactly on the groove. The forefinger of the left hand is kept in the groove during the entire intervention, with the middle finger on the median surface of the knee. The right hand holds the other side of the knee joint. The operator stands with the leg on his right. The force applied must be rapid and regularly increasing, not jerky. It is unnecessary and unwise to attempt to complete the operation at the first attempt. After exerting the regular force with hands, forearms and elbows, the operator should give up and start afresh, but never removing his hands or the fingers from their places. The slightest displacement of the thigh on the block should be corrected at once. The maneuver

Figure 1.

is repeated as often as necessary until the desired result is attained. In many cases it is accomplished at the first attempt. It is indispensable that the condition of the epiphysis should be determined by radiography in persons approaching the age limit. Some of his patients were able to flex the knee without pain as early as three to five days after the intervention.

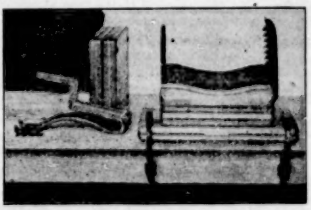


Figure 2.

The subcutaneous hematoma and the pains are always trivial. The cast applied is worn for five to seven weeks. Epiphyseolysis attacks the deformity at its culminating point and reduces the functional shortening to the least possible minimum. The after-treatment is shorter than after other interventions for correction of this deformity. It does not interfere with

Figure 3.

the later development of the extremity. He gives radiographs of several typical cases, and describes the anatomic findings in his experiments on the cadaver.

95. **Treatment of Lax Paralysis of the Legs.**—Möller recommends a walking cast, such as Krause applies in cases of fracture of the leg. The limb is placed in it in over-

correction. The child can begin to walk in it after two days. The cast is taken off in four to six weeks, the position of the leg corrected, and a cast applied again, while a supporting apparatus is made. It answers the purpose merely of retention and substitution. As the child has already been walking in its cast, the supporting Hessing apparatus causes no disturbance. If the physician wishes to dispense with an apparatus by transplantation of tendons, the conditions are the most favorable possible at this stage. The muscles have been strengthened by use in the cast, and even arthrodesis is more readily done. Four children, treated on these principles, were able to walk with a chair or cane two to five days after application of the cast, while before that the extensive paralysis of both legs had rendered any attempt to walk or stand impossible. Two other children with almost total paralysis, and two others with paralytic clubfoot were treated in the same way, and the results have been surprisingly satisfactory.

98. **Anatomic Conditions After Bloodless Reduction of Congenital Dislocation of Hip.**—Müller gives illustrations of lengthwise sections of two hip joints from children whom he had treated by bloodless reduction a few months and two years before. One had died from meningitis and one from pneumonia. The conditions in the hip treated two years before were almost ideally physiologic. The head of the femur rested in a cavity resembling the normal acetabulum, and enclosing more than two-fifths of a circle. The roof was broad and thick, but, as it consisted almost entirely of cartilage, in radioscopic examinations the conditions did not appear as perfect as they were in reality. The two cases emphasize the importance of the conditions in the capsule in regard to the ultimate outcome. The large recess in the capsule, in which the head formerly rested, is empty after reposition, but, on account of its elasticity, the capsule retracts and, by the pressure of the surrounding parts, folds down on the head of the femur, clinging closely to the latter and holding it in its new place. The capsule continues to shrink and the folds gradually become smoothed out until, in time, the capsule stretches smoothly and normally from its attachment to the acetabulum to its insertion in the neck. This must occur very early, as in one of the joints described, examined only six and one-half weeks after reposition, the capsule was stretched so taut that even after removal of the bandages the head remained in the acetabulum, at least while the child lay in bed and was carried. If weight had been borne on the limb and adduction had occurred, the capsule would probably not have been strong enough to stand the pressure. This can be counted on after three or four months, which, therefore, Müller accepts as the minimum interval before removing the cast. The capsule now holds the head in place and, by exercising its functions, the joint gradually builds up the bony and cartilaginous formations, which restore conditions in the joint to the nearly normal state seen in the first of the specimens he illustrates. These formations certainly have some beginning while the limb is in the cast, especially at the cartilaginous rim of the acetabulum on its anterior and upper margin. The constant pressure of the capsule transforms, even at this early date, the shape of the cavity from a plate more to that of a cup. The strong tension of the anterior wall of the capsule obtained by the vigorous abduction has a twofold purpose: it tilts the edge of the acetabulum, and also presses the head into its cavity, neither of which could be accomplished by the cast alone. Atony of the capsule from long disuse excludes this important factor in the cure and, hence, it is advisable to wait patiently quite a long time if treatment fails, before renewing the attempt. His experience includes 40 cases of unilateral luxation, and 70 per cent. have been completely cured. He attributes his success to his practice of applying the cast down to the ankle in pronounced abduction and outward rotation, with the knee stretched. This best insures the retention of the head in the acetabulum. In several cases the cavity was so shallow that success seemed absolutely impossible, but treatment on these lines has resulted in permanent correction of the luxation. The results in bilateral luxation have not been so favorable. Only 5 of the children have been permanently cured. He ascribes the failures to the fact that at first he included subjects really too old for this method of treatment, and also to his former practice of treating both joints at one sitting, by which he lost the beneficial effect of functional use of the joint. No time is gained in the end, and many advantages are thrown away by attempting to treat both hips at once. Massage or other after-treatment is not necessary for young children. He concludes with the remark that many of the failures in the unsuccessful cases were due to the lack of intelligence on the part of the parents, or else the cases date from the earliest days of the method. He thinks he can safely say that in by far the largest majority of cases it is possible to obtain complete cure by bloodless reposition.

100. **Treatment of Subjective Troubles of the Middle and Front Foot.**—Hasebroek refers to the pains and other disturbances in the articulation between the astragalus and calcaneus and the navicular and cuboid bones, and between the navicular and the three cuneiform bones. Also in the articulation between the cuboid and cuneiform bones and the metatarsal bones. He considers the pains in these joints, with the bones intact, an affection *sui generis*. The disturbances in the first articulation resemble the pains of flat-foot, but they are undoubtedly due to some slight and forgotten traumatic injury, to some local rheumatic or gouty process, or to an actual neurosis of the joint. Many cases of supposed flat-foot unmistakably belong in this category, especially those that do better without the flat-foot support. Treatment should be massage and gymnastics of the joint, with treatment of the underlying cause, if possible. A support for the joint may also be necessary, a celluloid insole. He recommends his patients to buy their shoes ready-made at a large establishment, instead of having them made to order, subject to the whims of some conceited shoemaker. Mild rheumatic affections recover most rapidly; the gouty or senile cases are more obstinate, and the neuroses are sometimes rebellious. In prophylaxis, a supporting insole will be found effective in preventing the tendency of the foot to turn over. Children whose ankles turn and who, thus, are unable to skate, will sometimes be completely cured by the supporting insole. This turning over of the foot is liable to cause injury of the joint and the wearing of the insoles may prevent the above disturbances later. The disturbances in the other articulation, the "Lisfranc joint," include stiffness, with a tendency to plantar flexion and turning in of the front portion of the foot. The pains are localized more between the great and second toes and are accompanied by callous growths under the ball of the great, second and third toes. Hasebrock thinks that the anatomic structure of the forefoot in relation to the middle foot and arch is responsible for the development of corns and callosities more than the footgear. Treatment of disturbances in this point should include massage and gymnastics, supplemented by raising the forefoot by an appropriate insole. It should rise gently and supply a slight flat expanse for the front part of the foot. The relief is immediate. The footgear should be long enough and allow plenty of room. These insoles should be used whenever a tendency to callous growths at these points is observed. They may avert trouble later.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

DISEASES OF THE SKIN: Their Description, Pathology, Diagnosis and Treatment, with Special Reference to the Skin Eruptions of Children, and an Analysis of 15,000 Cases of Skin Disease. By H. Radcliffe Crocker, M.D. (Lond.), F.R.C.P., Physician for Diseases of the Skin in University College Hospital. Third Edition, Revised and Enlarged. With Four Plates and 112 Illustrations. Cloth. Pp. 1466. Price, $5.00. Philadelphia: P. Blakiston's Son & Co. 1903.

HARRINGTON'S HYGIENE. A Manual of Practical Hygiene for Students, Physicians and Health Officers. By Charles Harrington, M.D., Assistant Professor of Hygiene in the Medical School of Harvard University. Second Edition. Revised and Enlarged. With

113 Engravings and 12 Full-page Plates in Colors and Monochrome. Cloth. Pp. 755. Price, $4.25 net. Philadelphia and New York: Lea Brothers & Co.

THE DIAGNOSIS AND MODERN TREATMENT OF PULMONARY CONSUMPTION, with Special Reference to the Early Recognition and the Permanent Arrest of the Disease. By Arthur Latham, M.A., M.D. Oxon., M.A., Cantab., Author of the Prize Essay on the Erection of His Majesty's Sanatorium. Cloth. Pp. 215. Price, $1.50 net. New York: Wm. Wood & Co. 1903.

DISEASES OF WOMEN. A Clinical Guide to Their Diagnosis and Treatment. By George Ernest Herman, M.B. Lond., F.R.C.P., Obstetric Physician to and Lecturer on Midwifery at the London Hospital. With Upwards of 250 Illustrations. Revised Edition. Cloth. Pp. 884. Price, $5.00 net. New York: Wm. Wood & Co. 1903.

INDEX-CATALOGUE OF MEDICAL AND VETERINARY ZOOLOGY. Part 2. (Authors: B to Buxton.) By Ch. Wardell Stiles, Ph.D., Consulting Zoologist of Bureau of Animal Industry, and Albert Hassall, M.R.C.V.S., Acting Assistant Zoologist of Bureau of Animal Industry. Paper. Pp. 198. Washington: Government Printing Office. 1903.

A TEXT-BOOK OF PRACTICAL MEDICINE. For the Use of Students and Practitioners. By William Gilman Thompson, M.D., Professor of Medicine in Cornell University Medical College. Second Edition, Thoroughly Revised. With 62 Illustrations. Cloth. Pp. 1104. Price, $5.00. Philadelphia and New York: Lea Brothers & Co.

THE INTERNAL SECRETIONS AND THE PRINCIPLES OF MEDICINE. By Charles E. de M. Sajous, M.D., Fellow of the College of Physicians of Philadelphia. Volume I. With 42 Illustrations. Cloth. Pp. 800. Price, $6.00. Philadelphia: F. A. Davis Co. 1903.

QUARTERLY PUBLICATIONS OF THE AMERICAN STATISTICAL ASSOCIATION. I. The Vital Statistics of the Census of 1900. By Frederick L. Hoffman. Paper. Pp. 202. Boston: J. P. Shults. 1902.

REPORT OF MINISTER OF AGRICULTURE for the Dominion of Canada for the Year Ended Oct. 31, 1902. Printed by Order of Parliament. Paper. Pp. 284. Ottawa: S. E. Dawson. 1903.

PUBLICATIONS OF THE MISSISSIPPI HISTORICAL SOCIETY. Edited by Franklin L. Riley, Secretary. Vol. VI. Cloth. Pp. 567. Oxford, Miss.: Printed for the Society. 1902.

REPORT OF THE COMMISSIONER OF EDUCATION for the Year 1900-1901. Volume I. Cloth. Pp. 1216. Washington: Government Printing Office. 1902.

The Public Service.

Army Changes.

Movements of officers of the Medical Department, U. S. Army, under orders from the Adjutant-General's Office, Washington, D. C., from Feb. 7 to 20, 1903:

Brown, Justus M., colonel and assistant surgeon-general, U. S. A., at his own request, under the provisions of the Act of Congress approved June 30, 1882, has been retired by the President from active service, Feb. 13, 1903, he having served more than forty years.

McCallum, Francis M., contract surgeon, U. S. A., in addition to his present duties at Indianapolis Arsenal, is assigned to duty as examiner of recruits at Indianapolis, and will report in person accordingly to Major James E. Macklin, Eleventh Infantry, recruiting officer at that place.

Agramonte, Aristides, contract surgeon, now at Havana, Cuba, will report in person to the commanding officer, Cabana Barracks, for temporary duty and by letter to the commanding general, Department of the East.

De Shon, George D., captain and asst.-surgeon, having reported his arrival at San Francisco, in compliance with orders heretofore issued, will proceed to Boston and assume the duties of attending surgeon and examiner of recruits in that city. Captain De Shon will report by letter to the commanding general, Department of the East.

O'Neill, Joseph A., contract surgeon, U. S. A., is ordered to report in person not later than Feb. 16, 1903, to the commanding officer First Battalion, Fourteenth Infantry, at Fort Brady, Mich., for duty to accompany that battalion to the Philippine Islands, and on arrival at Manila to report in person to the commanding general, Division of the Philippines, for assignment to duty.

Winn, Robert N., first lieut. and asst.-surgeon, U. S. A., is relieved from further duty at Fort Riley, Kan., and will proceed to Fort Grant, Ariz., and report in person to the commanding officer of the latter post for duty and by letter to the commanding general, Department of the Colorado.

Navy Changes.

Changes in the Medical Corps of the Navy, for the week ending Feb. 28, 1903:

Surgeon J. G. Field, detached from duty with recruiting party, and ordered to the *Bennington*.

A. A. Surgeon G. G. Hart, ordered to duty with recruiting party.

Surgeon J. W. Ross, appointed medical director from Feb. 5, 1903.

A. A. Surgeon J. C. DeVries, appointed acting asst.-surgeon, Feb. 16, 1903.

Surgeon E. H. Marsteller, ordered to the *Panther* via the *Raleigh*.

Medical Director A. F. Price, detached from the Naval Hospital, Washington, D. C., and ordered to the navy yard, New York.

Surgeon G. B. Wilson, detached from the *Panther* and ordered to the Naval Hospital, Chelsea, Mass.

Surgeon C. F. Stokes, detached from the *Oregon* and ordered home to wait orders.

Asst.-Surgeon B. L. Wright, detached from treatment at the Army General Hospital, Fort Bayard, N. M., and ordered to the Naval Hospital, Pensacola, Fla., for treatment.

A. A. Surgeon L. H. Schwerin, ordered to duty with recruiting party No. 4.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Feb. 26, 1903:

Asst.-Surgeon J. W. Kerr, to report at Bureau for special temporary duty.

Asst.-Surgeon B. S. Warren, granted extension of leave of absence, on account of sickness, for thirty days from March 1.

A. A. Surgeon M. H. Ross, relieved from duty at Cairo, Ill., and directed to proceed to Los Angeles, Cal., and report to medical officer in command for duty.

A. A. Surgeon F. F. Sams, granted extension of leave of absence, on account of sickness, for thirty days from February 17.

Pharmacist S. W. Richardson, granted leave of absence for seven days from Feb. 21, 1903, under provisions of Paragraph 210 of the regulations.

Pharmacist E. J. Thurston, to report to chairman of board for physical examination to determine fitness for promotion to the grade of pharmacist of the first class.

Pharmacist G. A. Morris, granted extension of leave of absence for seven days from February 18.

BOARD CONVENED.

Board convened at the Bureau, Washington, D. C., Feb. 25, 1903, for the physical examination of Pharmacist E. J. Thurston, of the second class, to determine his fitness for promotion to the grade of pharmacist of the first class. Detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon-General H. D. Geddings, recorder.

REINSTATEMENT.

E. J. Thurston, reinstated and appointed pharmacist of the second class.

CASUALTY.

A. A. Surgeon C. F. Ulrich, died Feb. 17, 1903.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Feb. 28, 1903:

SMALLPOX—UNITED STATES.

California: Los Angeles, Feb. 7-14, 3 cases; Sacramento, Feb. 7-14, 2 cases; San Francisco, Feb. 8-15, 2 cases.
Florida: Jacksonville, Feb. 14-21, 3 cases.
Georgia: Atlanta, Dec. 31-Feb. 18, 64 cases, 4 deaths.
Indiana: Elwood, Feb. 15-22, 6 cases; Evansville, Feb. 14-21, 6 cases; South Bend, Feb. 14-21, 2 cases.
Iowa: Des Moines, Jan. 1-31, 10 cases.
Kansas: Wichita, Feb. 7-14, 1 case.
Kentucky: Lexington, Feb. 14-21, 3 cases.
Maine: Biddeford, Feb. 14-21, 4 cases.
Maryland: Baltimore, Feb. 14-21, 1 case.
Massachusetts: Boston, Feb. 14-21, 10 cases; New Bedford, Feb. 24, 1 case.
Michigan: Detroit, Feb. 14-21, 29 cases; Grand Rapids, Feb. 14-21, 14 cases; Marquette, Feb. 7-21, 10 cases; Menominee, Feb. 7-14, 1 case; Port Huron, Feb. 14-21, 8 cases.
Missouri: St. Louis, Feb. 8-22, 26 cases.
Nebraska: Omaha, Feb. 7-14, 3 cases.
New Hampshire: Manchester, Feb. 14-21, 2 cases.
New Jersey: Camden, Feb. 14-21, 9 cases.
New York: Feb. 14-21, Buffalo, 1 case; New York, 3 cases.
Ohio: Cincinnati, Feb. 13-20, 20 cases; Cleveland, Feb. 14-21, 6 cases, 2 deaths; Dayton, Feb. 14-21, 7 cases.
Pennsylvania: Erie, Feb. 14-21, 7 cases; Johnstown, Feb. 14-21, 1 case; McKeesport, Feb. 14-21, 2 cases; Philadelphia, Feb. 14-21, 25 cases, 6 deaths; Pittsburg, Feb. 7-14, 12 cases, 3 deaths; Reading, Feb. 16-23, 1 case.
South Carolina: Charleston, Feb. 14-21, 3 cases; Greenville, Feb. 7-14, 2 cases.
Tennessee: Feb. 14-21, Memphis, 2 cases; Nashville, 1 case.
Utah: Salt Lake City, Feb. 7-14, 20 cases.
Washington: Tacoma, Feb. 9-14, 1 case.
Wisconsin: Green Bay, Feb. 15-22, 1 case.

SMALLPOX—FOREIGN.

Austria: Prague, Jan. 24-31, 5 cases.
Belgium: Jan. 24-31, Antwerp, 8 cases, 1 death; Brussels, 4 deaths.
Germany: Hamburg, Jan. 31-Feb. 7, 3 cases.
Great Britain: Birmingham, Jan. 24-Feb. 7, 14 cases, 1 death; Dublin, Jan. 31-Feb. 7, 2 cases; Leith, Jan. 24-31, 2 cases; Liverpool, to Jan. 31, 176 cases, 13 deaths; London, Jan. 31-Feb. 7, 4 cases; Manchester, Jan. 31-Feb. 7, 36 cases; Nottingham, Jan. 31-Feb. 7, 4 cases; Sheffield, Jan. 24-Feb. 7, 5 cases, 1 death; Sunderland, Jan. 17-24, 1 death.
India: Bombay, Jan. 20-27, 14 deaths; Calcutta, Jan. 17-24, 2 deaths.
Russia: Odessa, Jan. 11-18, 2 cases; St. Petersburg, Jan. 24-31, 88 cases, 20 deaths; Warsaw, Jan. 3-17, 7 deaths; Warsaw, Jan. 24-31, 2 deaths.
Spain: Corunna, Jan. 31-Feb. 7, 1 death.
Uruguay: Montevideo, Dec. 1, 1902-Jan. 7, 1903, 9 cases, 2 deaths.

YELLOW FEVER.

Mexico: Vera Cruz, Feb. 7-14, 4 cases.

PLAGUE—INSULAR.

Hawaii: Honolulu, Feb. 12, 1 death.

PLAGUE—FOREIGN.

India: Bombay, Jan. 20-27, 455 deaths; Calcutta, Jan. 17-24, 76 deaths; Karachi, Jan. 11-26, 54 cases, 41 deaths.
Mexico: Masatlan, Jan. 17-24, 51 cases, 27 deaths.

CHOLERA—FOREIGN.

India: Bombay, Jan. 20-27, 1 death; Calcutta, Jan. 17-24, 48 deaths.